Indian Education

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INDIAN EDUCATION.

We,—we have chosen our path
Path to a clear-sighted end,
Path of advance!

VOL. III.] JUNE, 1905. [NO. 11.

EDITORIAL NOTES.

IT is a question worthy of consideration whether the Indian und
graduate is not the victim of a repeated overdose of lectu
An Oxford undergraduate, if we remember rightly, is rarely exp
to attend more than twelve or, at most, fifteen lectures in the
though the hours of study at Oxford would easily admit
At Oxford, formal lectures usually are delivered in the f
Then follows a period of recreation and then another pe
the diligent student devotes to study, either in private or
or with his tutor. The lecture hours are thus broken
student is able to devote himself to his study in the late
day, fresh from an interval of relaxation. Seldom does
three lectures in succession, against five hours of continuou
ing he would instantly and violently rebel. Far different is t
of the undergraduate in this country. Social habits and custo
probably responsible for the fixing of the hours of College
between 11 A.M. and 4 P.M., that is, during the five hottest
the day. The fact that all Indian Colleges are wholly
non-residential, makes it almost inevitable that Colleg
be condensed into one continuous period, for the
many cases the Professors, too, live at some dista
College. Daily, therefore, for five days in success
cases on Saturdays also, (though that is usua
student listens or pretends to listen during fiv
the words of wisdom which fall from the
Lecturer. It was stated before the Indian U
that a student at a Scottish University migh
attending some 700 lectures, while the Ind
full terms and passes in four years, atte
five lectures per week is the number a f
ed to attend at the Presidency Col
At Calcutta and Allahabad they

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pose tender age. These
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velihood for himself and his

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though it is stated that a student of the Muir Central College, Allahabad, who took up English, Mathematics and Science, would have thirty-six lectures a week to attend.

However cogent may be the reasons which have led to this system, there are many serious objections to it. It does not seem possible that a student, especially a student in his first year, can really concentrate his attention for five hours on five different subjects, or that he can really remember all that can be said during so long a period. It is true that he can make notes, but the notes of Indian students, unless taken from dictation, are not apt to be very valuable and the mass of notes accumulated from so great a
mber of lectures, is an additional burden to him. It is true also
t some of his five hours may be spent in writing exercises or in
rmal classes, but this only slightly lessens his daily burden.
his College work is over, he still has, if he is an industrious
, five hours class work to revise, and the next day's five hours
prepare ; he must still, if he is a wise student, devote an
wo to cricket, tennis, or whatever form of exercise he
e will still wish, if he be a student of intelligence, to look
ers and monthly Magazines and inform himself of the
r which he is preparing himself, to mix with his fellow
conversation and discussion, to attend the meetings of
ry, debating and other Societies which are no unimportant
College life. How is the student who lives at home and is
ed to devote some part of his time and attention to family
mestic affairs, to find time for all this? The fact is that he
t, and fails to reap many of the advantages of College life.
attends all his lectures but neglects his exercise and that
self-chosen culture which is at once so valuable and so
r he 'cuts' some of his lectures and exposes himself
s of a discipline which the authorities cannot allow to

ay how to obviate these difficulties. To make
y residential is not, at present at least, possible,
e must be made to realize that only as a resi-
find time to enjoy all the benefits of a College
ution of informal classes for formal lectures
the classes must be small and the staff
t desirable that students should 'cut'
er of lectures could be reduced, depends
ork and of the student. If it were
obtain an intimate knowledge of

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the capacity and knowledge of individual students, they might exempt certain as able to make more progress if left to themselves.

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In the framing of regulations for the Allahabad University, the question of fixing a minimum age for candidates for the Matriculation was hotly debated. To our mind there should be no doubt that it is most desirable. The main argument against it is that it fixes a purely external arbitrary test in place of a real and subjective test of fitness. It is urged that the development of the human intellect proceeds on no fixed rule, and cannot be regulated by artificial limitations; that one boy may be fit for University Education at fourteen, and another at sixteen years of age. To this we answer that the age at which the boy develops into the man is fairly well defined by nature herself, and that it is the duty of those who control the education of a people to see that the task intended for the matured intellect is not undertaken till maturity is clearly attained. Premature development is more rare than normal and tardy development, and a University must legislate for the majority. It is customary to sneer at English Universities as retaining the customs of the Middle Ages, but those who demand that youths shall be admitted to the University regardless of age, are returning to one of the worst features of the Mediæval 'Schools.' Almost every foreign University has an age limit. Granting that in India development is earlier than in Europe, regard is paid to that consideration in fixing the minimum age at sixteen, for in Europe it is seldom that the undergraduate is under eighteen at the beginning of his career. Moreover, the dangers of admitting youths of too tender age to the University, are infinitely greater than the evil or hardships involved in keeping back a student for one or two years. It is too often assumed that such delay is a hindrance to development. But development is not necessarily hindered because a boy is kept at school a year or two longer, and in very many cases it is ultimately accelerated. On the other hand the growth of the mind may be permanently impaired if it is prematurely presented with problems of thought which are only capable of being solved by fully developed mental activity. Physical development must also be taken into consideration and there are, too, moral dangers in College life to which it is most unwise to expose tender age. These last are things which are apt to be forgotten by those who are eager to enable the poor student to earn a livelihood for himself and his family at the earliest possible moment.

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Among the matters to which the attention of the Committees, revising the regulations of the Bombay University should direct their attention is the English course for the M.A. examination. The course is intended to occupy two years, but it is considered by graduates as one of the easiest, and is more and more often undertaken in one year. This means that the student crams into one year studies which are intended to occupy two, and by taking the shortest cut to the degree for the most part he loses half the benefit of his studies. Examiners do their best to prevent the undeserving from passing by applying severe tests, but the power of the examiner in this respect is sometimes counteracted by the ingenuity of the examinee in concealing his method of study. To ensure that the M. A. degree is obtained only after a really careful study of English, we would have the University prescribe that the examination shall not be taken until two years after graduation, as at Madras. An exception might perhaps be made in favour of those who had obtained first-class marks in English at their B. A. examination; these might be allowed to the option of taking the M. A. examination after one year's study, as is done at Allahabad. Further, we would have the examiners freed from all absurd restrictions in assigning marks. They should not be required to assign marks to each question on the printed paper, nor even in the returns of marks sent in to the Registrar. It is sufficient in advanced work like that of the M. A. that the examiner should show by the total of marks assigned whether he considers the candidate worthy of a first, second or third class or not fit to pass. This would altogether do away with the absurd habit of giving grace marks. Even more important, however, than this is the nature of the course of study prescribed. At present the subject of the Examination in theory is the history and literature of the English language. Practically the M.A. is an examination in some of the works of some five authors, such as (to quote the subjects of 1905) the *Prologue* and two *Tales* of Chaucer, three plays of Shakespeare, Carlyle's 'Hero Worship', and selections from Steele and Landor. Now the authors and books prescribed are by no means always well selected. In the present year, English poetry is very inadequately represented by Chaucer and Landor, while the books are too easy both in themselves and relatively to those selected in other years. We would have a slightly larger and more representative number of authors, not books prescribed, so that the possession of an M. A. degree might represent a real knowledge of the chief masterpieces and makers of English literature. And we would have one whole paper devoted to the history of the English language. We are not demanding a profound knowledge of Old English (*i.e.,* Anglo-Saxon), Beowulf, the Chronicle, etc., but a general knowledge to the origin and growth of English as a spoken and written language. We believe most students leave the University profoundly ignorant of this. Even candidates for the M. A. generally content themselves with "getting up" the features of Chaucerian English from the introduction to an annotated text. How can English *scholars,* in the true sense of the word, be produce by such cursory study as this?

EDUCATION IN ENGLAND.

BOTH in England and in Wales, not to speak of Ireland, the educational barometer points to storm. 'The English,' said a writer in the seventeenth century*, 'are a people so naturally inclined to freedom that they can hardly be induced to embrace any discipline that may abridge it.' But everything which deserves the high name of education involves discipline. It is a being taught to do things which we should naturally prefer not to do. And any national system of education, unless it be merely a loosely-knit patchwork of contraries, carries with it the obligation of submitting individual, preference to the authority of the State. It is to the on-coming of the power of the State, and to an instinctive sense of the significance of its claims to determine the main lines of the general and technical training of the younger generation of its citizens, that we may trace back the deeper causes of our educational unrest. A multitude of influences converge in the direction of momentous change. Sooner or later the crisis must come, and we are feeling the strain of its gradual approach. World-politics point to the coming of it. The slow decay of the old social order has prepared the way for it. Thought is febrile. Social theories are tumultuous in their conflicting aims. Bitterly discontented with the present, writers seek relief in constructing futile and unattainable utopias. Material needs clamour for satisfaction on a gigantic scale. The love of excitement grows—anything to lay these haunting troubles of the mind! And all these things affect education, which is an endeavour to prepare for life, and which is therefore puzzled and perplexed when those who must avail themselves of its services are uncertain for what kind of life, and with what real principle of living they would have their children prepared.

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* Henderson in his *Death-bed Declaration,* 1646.

Is it not incumbent upon us, therefore, in these difficult times to approach all problems of educational reorganisation in a spirit of patient consideration for divergent beliefs and for conflicting, half-formed aspirations? Shall we not do wisely to do as well as possible that which lies most nearly to our hand, instead of craving for comprehensive settlements, for logical solutions, and for symmetrical designs, at a time of which transition is the dominant feature and when the awkward testy temper of a transitional period asserts itself on every hand?

There are now in England and Wales six separate and potent causes of our educational unrest.

The first is the social movement. Economic prosperity has produced an upper artisan class. This class requires a type of education on a level far superior to that provided in the old-fashioned public elementary school. It requires it, and it means to get it. That is the force which lies behind the powerful movement for the provision of efficient higher grade elementary schools and which in due time will revolutionise the conditions of work in the 'standards' of the ordinary elementary schools,—at any rate in those which are situated in the districts where the most intellectual artisans reside. The clerk population will join hands with them in their demand. The old 'parochial' theory of elementary education is breaking down under the strain of the new needs. The 'charity school' ideal, which has lingered on in the minds of many middle and upper class people (especially women), is incompatible with the new aspirations of the superior work-people. Those aspirations are of good augury. But, when they come to find expression in actual policy, they sometimes take a doubtful form. A cheap, flashy secondary education looks attractive to those who are discontented with the elementary schools without exactly knowing why. It seems socially superior, and therefore it is desired. But the result will be disappointing. The only chance for secondary education is to make it really good, and under modern conditions it cannot be made really good, except at a cost which makes the wholesale provision of it out of the question. But the policy of aiming at quality, instead of at mere quantity, in secondary education involves selection of pupils. It is incompatible with putting a good secondary school within an easy walk of every garden gate. But the tendencies of democracy are at present towards the wholesale diffusion of a cheap edition of a kind of training which can only fit the few (not the few who happen to be well off, but the few who are intellectually qualified to profit by it) and which is ill-adjusted to the needs of the many.

The second cause of educational unrest is the vehemence of religious conviction—one of the greatest forces in the world and apt to assert itself, through instinctive need of self-defence, in periods of intellectual disintegration. In the educational sphere religious feeling is showing itself in England and Wales in these quarters. (1) The Roman Catholic clergy are convinced that the interests of their church require separate denominational day-schools. For my own part, I doubt the soundness of their reading of the facts of the case, but no one can observe their tenacity without respecting it. The Roman Catholic laity, indeed, are in their heart of hearts often lukewarm about the clerical control of education, but in Ireland and in England the Roman Catholic clergy are at present powerful enough to impose their view upon the generality of the laity of their church, with the result that the problem of Roman Catholic education is worrying politicians on both sides of the House of Commons like the toothache. The Liberals suspect that if aid from public funds were refused to all schools except those which were undenominational or which made themselves entirely secular, there would be a movement of 'passive resistance' on the part of ratepayers (chiefly Roman Catholic ratepayers) which would throw the present serious movement among the nonconformist left wing into the shade. Another side of the same religious trouble has come once more into the foreground of affairs since last month in the discussion about a Catholic University in Ireland, and the perplexity of it left its mark upon the very inconclusive and yet embarrassing debate in the House of Commons. On that subject Mr. John Morley would probably be found in the opposite lobby to Dr. Clifford, and Mr. Balfour to an Ulster conservative. (2) The Anglicans, or rather a section of them, attach, and naturally attach, great importance to the 'atmosphere' of their elementary schools. They wish the whole spirit of the school to be devout and reverent and Anglican in tone. Hence the practice of taking the children, in some schools, to church during school hours on certain days, including those of special obligation. But the theory of the Education Acts is that a school which can accommodate the children of its assigned neighbourhood, is to be the school of that neighbourhood. The Education Acts, in their fundamental assumption, take it for granted that you no more need for one particular district two entirely different types of elementry education, than you want two different types of parcel post or of rate-collecting. But it happens that not all the children who live in a given village or district belong to parents attached to the Church of England, or in sympathy with that particular shade of Anglican teaching which the Clergyman prefers. Hence a conflict between the true Anglican theory of denominational education and the modern conception of the public elementary school supported out of public funds. The Anglican Church is not co-extensive with the whole body of ratepayers. (3) A small but growing anti-theological party is working hard, with the object of getting all state aided elementary education placed on a secular basis, and of substituting 'ethical' for the present forms of 'religious' instruction. It is not clear what the philosophical basis of such ethical teaching would be. There is no reason to think that any one form of it would command, as some sanguine persons think, universal agreement. The earnestness of many members of the anti-theological party commands respect, but perhaps one may say, without giving cause of offence, that they are fishing in troubled waters.

The third cause of unrest is the conflict of political ideals. Are we to aim at making the Empire a tightly organised unit, dominated by commercial aims, or (to take the other extreme view) are we to look forward to a national development on the lines (and with the presuppositions) of humanitarian cosmopolitan Liberalism, or is some tangled mixture of the two purposes our inevitable destiny? But you cannot plan a definite and effective system of national education, until you have a clear national, or imperial aim. And in the meantime, the dissonant ideals, unformulated for the most part, are expressing themselves in incompatible schemes, some of which are advocated with heat. Another form of political dissension turns upon the conflict between the claims of the Church and of the secular state to control the ideals of education, but this trouble is less serious in misty-minded and tolerant England than in France or in the Province of Quebec. Yet a third kind of political struggle is in progress in many country districts where the right form of educational organisation and the development of elementary and secondary education is in debate. The conservative farmers have one view of the subject, and the progressive reformers have another.

The fourth cause of our educational unrest lies in the growing discontent with the duller forms of the old tradition of higher secondary education. Parents grumble at the public schools,—grumble and send their sons to them. The masters are puzzled what to do, and go off to Switzerland or Italy for their holiday, and try to forget the problem. The causes of the trouble lie deep. They are at bottom the outcome of the fact that huge masses of new knowledge have come into the world during the past fifty years, and that no Vittorino da Feltre has forged a new educational instrument out of these intractable materials. The fight at Cambridge about Greek in the Little Go is but an affair of outposts compared with the great issues really at stake. And just at this critical juncture, Mr. Edward Lyttleton has been appointed Head-master of Eton. He goes with the good will and with the good wishes of a host of friends. He is a man of ideas, of strong convictions, and of loveable frankness of character. He is about to essay a great and difficult task, and every friend of the English Public Schools will wish him good fortune in his efforts to accomplish it.

The fifth cause of the unrest is the slow growth of a 'national' ideal of public education. S. T. Coleridge desired a national education which would 'form and train up the people of the country to be obedient, free, useful, and organisable subjects, citizens and patriots, living to the benefit of the State and prepared to die in its defence.' He has many disciples to-day. They think of Japan, and shudder at our English incoherency. What is in their minds was well put in a leading article in *The Times* a day or two ago. The writer expressed " admiration for a people who can produce at need not one but an indefinite number of men of high military capacity, so uniformly permeated by a sense of duty obliterating all personal motives as to constitute together an intellectual force, showing the unity of conception with the efficiency of execution which we associate with the operations of a single master mind. We have before us evidence of national education in its highest and most complete manifestation—education such as we in this country have hardly begun to conceive. We have co-ordinated intelligence at its best, fortified by an invincible *moral* and employing a physical education capable of carrying out all its behests." It is characteristic of Mr. Wells that the austere but voluntary aristocrats, who govern his new world-utopia, are called 'Samurai.' But it is not by cheap and hurried methods of imitation that we shall reach the reforms of which we begin to feel the need. 'Growth is slow when roots are deep.' Japanese efficiency is not the child of yesterday. Nor is it the kind of efficiency which is within the scope of English endeavour or which would express what is greatest in English character. 'Liberty,' as Bishop Butler said, 'is the very genius of our civil constitution.' It is through liberty that we shall fight our way to true self-control.

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The sixth cause of our educational unrest is economic. Good education is necessarily a very costly thing. It can never be cheap. It entails burdens. But the fashion of the demagogues has been to chatter about its being 'free.' Somebody must pay for it however, and the idea that the children of the working classes ought to be educated and fed free of charge at the expense of some dimly conceived milch-cow called 'the quality,' is moonshine. At last the truth is coming home. The Corporation of East Ham has struck, and has given solemn notice that it will not continue to administer the Education Acts. It says it cannot afford it. Somebody else must pay. And so the Corporation has 'given notice' to all its six hundred teachers, and Sir William Anson does not conceal his concern at what he calls 'a very serious situation.' East Ham is on the industrial fringe of East London. It is on the edge of what Cobbett used to call 'the Great Wen.' Its population is poor and largely works in London. There seems no sufficient reason why such a district should have a separate municipal existence. On London it depends; into administrative London it should be absorbed; and from the posted rates of London (the London of the rich as well as the London of the poor), it should draw the resources which will meet the educational burden against which it has made a rather melodramatic protest.

MICHAEL E. SADLER.

26th April, 1905.

PROBLEMS OF HIGHER EDUCATION IN INDIA.

III.—THE WORK OF THE UNIVERSITIES.

IF the end of the new education, most deeply viewed, is the regeneration of a society or group of societies, and if the practical working aim may be described with approximate exactness as intellectual freedom and moral strength, it is certainly in the universities that we should expect to find the end most vividly conceived, and it is the universities which should be the most potent means of bringing the desired result to pass.

The university with its associated colleges is the highest stage of the whole process of education, so far as education may be distinguished from the business of life and treated as preliminary to it. It might seem, then, that the more logical method would be to begin a study of our problems in detail with the lower and earlier stages—to begin with the elements of training in secondary schools, and proceed upward through the higher classes of schools to colleges and the university. This is indeed the natural order. But in accordance with a well-known distinction, if the primary school is first by nature, the university is first relatively to ourselves and our present treatment of the subject. It is the problems of collegiate education which are most generally familiar, and the question of university reform which has of late been most prominently before the educated public. Besides, inasmuch as the colleges and the university complete the education to be passed in review, it is in the work of the universities that the aim which informs and guides the educational movement will be most fully and completely realized. It is in the work of the colleges, therefore, that we may expect to find the aim most consciously and explicitly present. It is the graduates signed and sealed with university degrees who are the fine flower of the system. It is these young men who are to carry out with them into the world of action the character and capacities, the intellectual and moral energies, which are to be efficacious in the collective regeneration which is ultimately sought. The system will be known by its fruits. Consequently, it is here, in the university and its colleges, that we can with most advantage study how the end may best be attained, and even judge to some extent the rightness of the aim. A further advantage of the order to be followed is that, if we can determine satisfactorily the conditions of ultimate success in the colleges, we are in a better position to see what the schools must do in order to make the success of the colleges possible. For the work of the colleges is built on the work of the schools. Accordingly in the present paper the work of the universities will be considered in its widest aspects. In the next the contrasted functions of school and college will be discussed and an attempt made to indicate the way in which the work of college and school may most effectively be co-ordinated. After this the bearing of particular studies on the central aim will be reviewed, and especially the teaching of English. Next some special considerations will be offered as to the conduct of examinations in India. This will be followed by a survey of the special organization of school and college as instrumental to that training of character, which is the deepest and most serious side of the whole education, and to which even intellectual training is subordinate. A general gathering-up of the threads with a view to uniting them in a consistent system will complete the scheme.

It must be understood that within the limits of space imposed by the conditions only the most general aspects of the various problems can be dealt with. The aim will be to formulate principles: to indicate what would be the means best calculated to attain the results desired. Little attempt will be made, except incidentally, to apply the principles to the actual present practice of the institutions at work (though this application will always tacitly be kept in view), or even to develop the means in detail. At the same time, if the principles are admitted, they can be applied with no great difficulty to the system as we know it. We may turn to the schools and colleges with which we are familiar, and consider if the work is being done successfully and satisfactorily. If we find deficiencies, we may then, if we please, observe how far the system actually working conforms to the principles laid down, and from this go on to conclude in what directions, and by what means, practical improvements are to be sought.

The universities in India influence the general character of education in two ways. The more important is by the ideals set up and by the influences in furtherance of those ideals that can be brought to bear on colleges and schools. The other, to which in the past the control of the university has been almost exclusively confined, is by the courses of construction it prescribes for its examinations and the rules it makes for their conduct. The two are not, of course, wholly disconnected; in fact, the second might, perhaps, be more accurately regarded as a special application of the first. Its importance lies in the effects which prescribed courses and examinations have upon teaching.

I begin with the lesser and more familiar function. The end is to produce on the intellectual side freedom, that is to say, love of study for its own sake, genuine pleasure in things of the mind, alertness of interest, and above all the capacity to exercise judgment independently. How can the definition of courses of study and rules for examinations minister to this? In respect of examinations the means are, perhaps, rather negative than positive. But at least the university can here set before itself the conscious aim of working to encourage right methods of study, and use the utmost care to ensure that its degrees shall go to the right persons, that is, to those who are really educated and who possess the capacity and judgment which it is the aim of education to produce. In particular, there is in India special need to be extremely careful that the examination system does not itself tend to fetter the free action of the judgment nor encourage mechanical methods. There are those who would say that examinations in India have hindered and perverted education. This is certainly the case where undue value is assigned or allowed to the words of a text-book, or too much weight given to translations which may be learnt by heart or to book-work in mathematics or science. In too many cases the aim seems to have been rather to give a candidate a chance of passing by his favourite rote methods, than to compel students to adopt right methods in order to qualify for the distinctions which a university can give. Rules for examinations can at least be framed so as to discourage, still more so as not to encourage, wrong methods. But, if we first lay down and publicly announce a signally low percentage of passmarks, next fetter the judgment of our examiners by publicly notifying candidates the precise number of marks to be assigned to each question; if, moreover, when candidates are numbered by hundreds and two or more examiners have to examine in concert, we allow our examiners further to anatomize answers to questions into fragmentary values of marks and half-marks; if papers are of such a length that the questions could only be answered even by a ready writer in the most superficial way in the time allotted, while at the same time we insist that all the questions must be answered, what do we do but treat our examiners as machines, bind our examination system with the most rigid bands of mechanical quantitative valuation, and do what in us lies to hinder and hamper judgment of real knowledge, of capacity, of taste, of true education. The university which recognizes as right the ideal I have proposed will do the reverse of all this. It will make no public announcement of passmarks, recognizing and wishing the world to recognize that the true estimate of candidates' attainments is not quantitative; it will make no explicit assignment of marks in its examination papers, leaving the choice of questions to be answered to the candidate and the due valuation of answers to the examiner; it will trust its examiners to exercise their judgment with discretion, to make and hand down a right tradition in these matters. And to ensure against the danger of papers of excessive length, it will leave something here also to the judgment of the candidate and of the examiner, the extent of latitude for judgment being determined by the grade and character of the examination. In all but the most elementary examinations there should be some little latitude; in the highest examinations there should be a great deal of latitude. The guiding aim in all this will be that which we set up in the beginning, the endeavour by all means to cultivate capacity and judgment, so that the men turned out by the system may be characterized by some degree of true intellectual capacity and inspired by true intellectual ideals.

But the means need not, I conceive, be entirely negative, that is, confined to abstention from injudicious interference and the avoidance of flagrant errors in the regulations made; and in India I even think it is desirable that the university should endeavour to influence the conduct of examinations in the right direction. I should hesitate to tie examiners by any rigid rules however well devised; but it might, I think, be sometimes useful to tender advice to examiners and even to formulate directions for their guidance. In particular, it needs to be more widely recognized that examination is a means, and that the means need always to be subordinated to the end, which is right education. Examination is intended to be the test of right education, and its immediate aim is to sift the candidates who have been rightly educated, and who have acquired the capacities of educated men from those who have not. But it is also, I conceive, something more. It is itself one means of education and should contribute actively to the ends of education. In order that it may do so, we must endeavour to keep the examining closely in touch with the teaching. Examiners should as far as possible be actual teachers of their subject. The examination should have a direct reference to the teaching, and to some extent the teaching must be guided by examining; but we must be very careful that the guidance is in the right direction. With this last purpose in view it would be well if in some, if not all, cases examiners and boards of examiners should draw up reports of the work submitted to them, which reports should be made accessible to teachers by publication. If the examiners were themselves teachers of experience, such reports (which are not altogether unknown in India) should have a very high value. I hope to return to this subject more fully when I come to treat separately of examinations.

In the case of courses of study it is much more easy to see how a wise choice of subjects and skilful definition of courses may contribute to the ends of education. Here the main principle for India is that already insisted upon, namely, the expediency of strictly limiting courses of study and taking care that the extent of courses is not excessive. The reason, as already given, is partly that the education of the Indian student is impeded by the special difficulty, not found elsewhere (not even in Japan), that he is obliged to study almost entirely through the medium of a foreign language. We must, therefore, not institute comparisons between what is prescribed for the Indian student and what is required elsewhere, as if the cases were parallel. We must keep in mind that the Indian student has to overcome a great initial difficulty, not the learning of, but the learning *in* a foreign language, and we must accordingly set him a task less in amount, though we must not relax standards in any other respect. This applies specially to English literature, to History, Philosophy and Science; in a less degree to Mathematics; and not at all to oriental languages. This also must be said, though somewhat in opposition to present tendencies. However desirable it may be on general grounds to give a more practical bent to the studies of Indian students, to teach Physical Science and kindred subjects in perference to languages and literature this must only be done on two conditions. The one is that we only teach these subjects where there is an adequate staff and adequate equipment for practical study. The other that we teach and test the practical subject really practically; that physical science means first and foremost "practical work," familiarity with the actual forces of nature and the actual handling of apparatus. If Physics and Chemistry and Biology and Sanitary science are merely taught out of a book without any first-hand acquaintance with the "things" with which these sciences deal, we have all the defects of the purely literary training back again without any of the compensating advantages which may be hoped for from literary education, the quickening influence of great ideas and the cultivation of taste. At the same time it should be remembered that the need is quite as great to teach literary subjects practically as to put practical subjects in the place of literary. Psychology, Ethics, Logic, even Metaphysics may be taught practically no less than Physics and Chemistry, if it is recognized that their problems are real problems and that the individual mind is to be exercised to find a solution, instead of taking second-hand solutions from books. The elements of feeling and thought are entities at least as real as atoms and ids and ions, and, provided that we treat them as such the sciences that deal with them are practical. In the same way the study of history and literature may be equally practical. Grammar is certainly a most practical subject, if rightly taught; and so is Philology. History is practical when we imaginatively reconstruct the past, and look upon the past as having a living relation to the present; when we make use of maps and pictures and of original documents, and weigh the problems of history by active sifting of the evidence recorded. Literature is practical, when we exercise our own reason upon its problems, and train our own judgment in its appreciation. It is, therefore, of great importance to equip the teaching of these subjects also with all necessary apparatus, maps and photographs and plans, dictionaries and books of reference. These hings are real and practical enough, and the student of literature should be trained in the handling and use of these no less than the student of physical science in the handling of test-tubes and electrometers. We want not only to introduce more science teaching, but to make the teaching of literature more scientific. Our aim must be that not only one or two subjects, but all subjects, shall be thoroughly taught on scientific principles; English literature as much as Physics; Oriental languages no less than English literature.

It remains to attempt to deal under the same limitations of space with the larger and more vital question of general control. If our definition of end is accepted in its entirety as including educating of character as well as educating of intellect, and even as putting the education of character first, certain very important and far-reaching conclusions can be affirmed at once without further discussion. Given the known conditions under which Indian colleges work, it may be laid down that the resident type of college has become a necessity. In no other way can the more general education of character through a common life and discipline be efficaciously attained. Everyone familiar with the working of an ordinary Indian Arts College is aware of the manifold and distressing hindrances to all the activities of the common life,—save and except that of lecturing and hearing lectures,—that are opposed by the dispersion of students after college hours. A "college" ordinarily remains in being for a space of five hours during which lectures are being delivered. For three, or four, or five, hours the student is taking lecture notes, and for three, or four, or five, hours the lecturer is lecturing. When the allotted period of labour is over, student and lecturer are alike wearied out, and need before anything else to go home for rest and food. For the remainder of the day the college, properly speaking, is not in being. College meetings of every description are consequently effected with the greatest difficulty, whether their purpose be literary, or 'oratorical' or purely social. College athletics are carried on in face of similar difficulties. It is impossible to get all students to join in them; it is often impossible to collect students at the right time, or in sufficient numbers. Similar difficulties arise in the case of college libraries, clubs-rooms, laboratories. Few students can make much use of these indispensable aids of thorough education; students who live at a distance can make little or no use of them. The collegiate life is hampered aud hindered in a score of ways under the non-residential system. But for any effective education of character we must have the collegiate life; to give efficacy to the collegiate life, we must have the residential system. In order then to get effective education of character, and much of the criticism of the last few years has been directed to urging the necessity of the education of character, we must make our colleges residential. It would seem, then, to follow that it is the duty of the universities as the supreme guardians of education, and the upholders of educational ideals, to institute a policy involving a gradual change from the non-residential to the residential character. The universities have been armed by the Universities Act with the requisite powers of affecting this change, and they should not be slow in putting them in force. Whereas now non-residence is the rule and residence the exception both for students and professors; in the course of a few years residence should have become the rule and non-residence the exception.

When this great change has been brought about, the institution of a right control over colleges, which at present bristles with difficulties, will be a comparatively easy matter. The more particular treatment of this subject is reserved for a separate paper on the organization of the college.

I shall conclude this present paper by noticing one or two instances in which the influence of the University over its colleges may become positively harmful and demoralizing. The first that I shall mention is percentage rules for attendance at lectures. When a University makes a rule, as the University of Calcutta does, that a candidate to be admitted to an examination must produce a certificate that he has attended at least 66 per cent. of the lectures of his college in all subjects, however good the intention of the rule may be, the practical result is that many students come to think that 66 per cent. of lectures constitutes the full extent of their obligations as students in this particular. Now a course of lectures is a connected whole, and every lecturer of any value desires his students to attend the whole course. If the first lectures are left out the lectures following are imperfectly intelligible; if lectures are dropped in the middle the thread of connection is lost; if the concluding lectures are "cut", the presentment of the subject is incomplete. For the good lecturer and the good student the alternative is the whole course or none, Such a rule as the above, which seems deliberately to countenance an ideal of two lectures out of three is consequently pernicious.

Similarly, rules which allow a student who has failed in one year's examination to rejoin a college for a shortened six months' course of study strike with deadly effect at college life and discipline.

An even more important matter that still needs attention and much stricter regulation is the passage of students on slight (and sometimes discreditable) pretexts from one college to another. "Rules for the transfer of students" we have, but as yet they fail to do more than slightly check the evil. Students pass from one college to another in the middle of a session. Students studying in one institution this year are studying in another next year. There seems to be no recognition of ties of loyalty or affection, no obligation of fidelity either to the institution or the teacher. Under these conditions the moral influence of the college as an institution is seriously restricted. The growth of public, spirit is checked and stunted. More stringent rules might affect something and the utmost rules can do should be attempted. The only radical cure, however, will be a change of public opinion, of tone and spirit. Here, again the most effective agency would be the change to the residential college. Qualification would then be not attendance at lectures, but continuous residence at a college from the first day of the academical year to the last.

Perhaps it may seem strange that I have reached the end of this paper without so much as mentioning the foundation of University professorships and the endowment of "research." Assuredly it is not from slighting the value of the highest branches of the work of a University. But the plain work-a-day educational work we are affecting to do, and are to a certain extent doing, is so important and on so large a scale, and so difficult, and so deficient, that I feel it must and should engross by far the largest part of our thought and energies for a long time to come. The improvement of collegiate education is a possible undertaking, and lies close to our hands. The encouragement of research has in India a somewhat hazy meaning and its attainment is remote. We play with "research students" here and there—and so far we do well; but the spirit that will produce true research students in any number has yet to be created. The production of this spirit in its education widely is at present the most important work for the University, and this I look for as the outcome of the ideal sketched in these pages. We may be content for the present if by the means indicated above we can produce in a considerable body of Indian students liberality of culture, openness of mind, a disinterested love of knowledge, and the enquiring spirit. The discipline of ordinary collegiate studies, fostered in a healthy collegiate life, might produce this much. When we have this in a genuine sense, the rest will follow of itself.

H. R. JAMES.

(*To be continued*).

ANTIQUITIES IN EUROPE AND INDIA.

HINDU students are not unjustly proud of the antiquity and character of "Hindu" civilization. But not a few misconceptions are prevalent upon the subject, founded for the most part upon the traditional lack of historic sense which characterizes the Hindu com-

munity, and upon the uncritical acceptance of obsolete or insufficient hypotheses popularized at various times by superficial writers, who have borrowed them from their original inventors without fully comprehending either their significance or their limitations. A notable instance of this kind is the so-called "Aryan" theory, which is the more glaringly fallacious in its common application in India, inasmuch as not a tithe of the individuals for whom the designation of "Arya" is claimed have any solid racial justification for their pretensions. Those who doubt this statement are recommended to study and digest the latest information on the subject as it is presented in the excellent linguistic and ethnological chapters of the Report of the last Census of India. Various effects may be attributed to such misconceptions, *e.g.*, a tendency to depreciate the culture and progress of "non-Aryan" peoples, the exaggeration of the antiquity, range, and depth of Hindu "Aryan" civilization, the ascription of anything that is remarkable in the philosophy, science, art, or religion of other lands and races to Hindu origins. Thus the writer has seen it gravely asserted by vernacular writers that the philosophies of Plato and Aristotle alike, the scientific discoveries of modern Europe, and even certain cardinal tenets of the Christian religion are borrowed from the conceptions, discoveries and beliefs of early Hinduism. In "politics" it is usually, though not always, conceded that European nations were superior, but in the apparatus and productions of art, in the common appliances of life, in nearly all, in fact, that marks off civilization from barbarism, it appears to be commonly assumed by Hindu authors that their ancestors were immeasurably further advanced than the ancient nations of Europe. Grudging concessions are occasionally made in favour of Egypt and Babylonia, China or Japan though even then the writers have seldom any adequate conception of the achievements of the inhabitants of these countries or of the superior antiquity of their culture.

And yet neither history nor recent archæology confirms these extravagant pretensions. To take a leading instance. The assertion is familiar (and vernacular writers in India use it for all and more than it is worth) that the Britons whom Cæsar found when he landed on the South Coast of Britain, were naked savages dressed in skins and painted a brilliant blue. But modern historical and archæological research shows us that these so-called "savages" were at least as well-equipped in both martial and domestic appliances, and quite as effectively organized politically as the ancient heroes of Aryavarta. The traditions and myths of Ireland, which in their claims to immemorial antiquity rival those of the Hindus (and perhaps with as much or as little justification), point to similar conclusions. And he would be a bold man who would venture to lay it down as an axiom that the metaphysics and theology of the Druids were less ancient or less profound than the speculations of the early Brahmin sages. It is the same with Scandinavian countries. Recent discoveries have testified to the brilliancy of a prehistoric Age of Bronze for which, so far as tangible "documents" at any rate are concerned, India can offer no counterpart.

Nor is it to be assumed that these are isolated instances. Evidence is fast accumulating to show that civilization in Europe is neither of to-day nor of yesterday. Nowhere, however, are its traces older or more numerous than in the Mediterranean basin. From Spain, from Italy and Sardinia, from Greece and the Archipelago, and last but not least from Cyprus and Crete the memorials and relics of an indigenous culture so primæval that beside it the age of Phœnicia or Rome dwindles into mere childhood, are everywhere rewarding the spade and pick-axe of the twentieth century archæologist. When Schliemann and his successors explored the sites of Argos and Mycenæ and of "holy Ilion" and at one bound took back the origins of Grecian culture nearly one thousand years, it was supposed by many that in this direction research had reached its limit and that for still earlier history the investigation must turn from Europe to Egypt and the valleys of the Euphrates and Tigris. How baseless the supposition was, the discoveries of Mr. A. J. Evans in Crete, have proved and are still proving.

Even in the earliest literature and songs of Greece, Crete was a land of fabled greatness, and but dimly comprehended myth, of primæval gods and long-vanished dynasties. To Homer indeed, the island was famous for little else. In his time (if one may venture to postulate a "time" and "personality" for him) it possessed no special ascendancy in the Hellenic world; still less was it a factor of supreme importance in the international relations of the peoples of the Mediterranean. Yet such things had been, though many centuries previously, and of them Homer was not altogether unaware. Traditions still lingered of a King Minos, Ruler of Crete and lord of many ships—traditions credible and incredible, yet mostly agreeing in this that they pointed to an empire old ere the rise of Mycenæ or of Argos had begun. Of the king himself and of his wisdom and power, many stories were told, but still more of the magnificence of his court and palace and of the diabolic skill of his wizard-artist Daidalos. But even to the ancients themselves these stories savoured rather of legend than of sober history. In recent times the king and all his works were set down as the fantasies of a solar myth, and were used to point not a few superior disquisitions on the mythopœic faculties of the primitive Aryan. A saner remnant may conceivably have cherished hopes that a kernel of history might some day be discovered in the husks of fable, but, having no objective evidence to offer, were compelled to hold their peace. It was reserved for Mr. Evans to do for Crete what Schliemann had done for the lost cities of Troy and Mycenæ.

Chronologically the effect of Mr. Evans' explorations has been to prove that a high European civilization was flourishing in the third millennium B. C., and that this was no foreign importation, but a growth of many centuries. So deep indeed do its roots plunge into the past that in the lower strata the remains synchronize with the earlier dynasties of Egypt. And these strata again rest on others which lead the investigator back to the Stone Age and to neolithic man. We have in Crete, in fact, a most wonderful stratigraphical chart illustrating the gradual rise and development of European man during thousands of years. A comparison with India may make the vastness of this perspective clearer. The majority of ancient architectural monuments in India are contemporary with the earlier or later "middle ages" A. D. Some reach back to the period of the Roman Empire: very few precede in date the birth of Christ and hardly any could confidently be reckoned as cœval with the older memorials of Athens or Rome. And yet these last are younger by one thousand years (and more) than the remains recently disinterred at Cretan Cnossos, of which the origins and development cover a period reckoned by its discoverer at nearly five thousand years, while even then the archæological plumb-line fails to gauge the range of the remoter neolithic depths. It is true that in India we hear of the vanished glories of legendary palaces at Indraprastha and Ayodhia, Dwarka and Kapilavasthu, but these remain "hear-say," and, as yet, at any rate, we have no objective evidence of their existence comparable for a moment in antiquity, splendour, and significance with that which we possess for Mycenæ, Troy or Cnossos.

Mr. Evans has concentrated his attention chiefly on the last named place long famous as the site of the mysterious "Labyrinth" which tradition connected with King Minos. But other English explorers have investigated other parts of the island and their results coincide in a most striking way with those of Mr. Evans. Hence we can safely infer that the civilization of Cnossos was no isolated exception due to the settlement of highly cultured foreigners among barbarian islanders, but represented typically and *par excellence* the progress made by the general indigenous population.

Let us see now what this culture actually meant. In the first place there would seem to have been a king who lived with his queen in a magnificent stone palace wonderfully decorated with paintings and pottery of extraordinarily skilful design and technique. Figures of animals and birds and fish and sea shells predominated, and seem even now so wonderfully life-like as to justify the fame of the Minoan Daidalos, the maker of sculptured forms that lived and moved. But statuettes and frescos of men and women also abound, and these are almost equally natural. The palace was built of hewn stone properly squared and fitted, and gypsum and stucco were also used in its construction. There were many chambers, large and small, and fitted with doors; there were baths and sanitary appliances, and an immense number of pottery utensils, cups, beakers, bowls, jugs, baking pans, storage jars, etc., many of which were beautifully moulded and painted. Vessels of bronze of exquisite workmanship have also been found, and traces of many of gold and silver. The palace treasures were kept in cellars underground, and were regularly registered and labelled. For these Minoan princes of the third millennium B. C. (or at least their ministers and clerks) knew how to cipher, write, and read in a script of their own, which was old even in their time, and relics of which and of its predecessors are coming to light in many places in South Europe. The East, we see, therefore, has no monopoly in the invention of figures or of the alphabet. The palace was provided with a spacious "plaza" flagged and tiered and furnished with a royal pavilion whence the king and his court watched such spectacles as sacred processions, dances, musical contests, dramatic exhibitions, pugilistic combats, and so forth. The "bull-fights," which were also a favourite Minoan amusement, were held in another arena. In the palace were shrines for the gods—the king was perhaps also a priest—and both prince and people appear from the many idols and votive offerings found to have been of a somewhat superstitious character. The chief deities were goddesses, whose symbols were the double-axes, the lion, and the cross. The last is exactly like the cross of Christian veneration, and seems like it to have received a certain devotion on its own account. Thus we see this symbol as a central object in a shrine flanked by two goddesses much as the cross of Christ in Christian art is represented between the figures of the Virgin and her mother. Like the king's palace were the stone villas of the nobles, only on a lesser scale, and below them came the stone houses of the business men and artisans who then as now crowded into towns.

Trade and manufactures, no doubt, proved the staple occupations of the islanders, who, however, depended mainly on themselves for the extension of their commerce. Their swift galleys swept the seas east and west, and the remembrance of the "thalassokratia" (or sea power) of Minos was something more than a vague dream of the past even in the days of Herodotos. Their "art-ware" in particular was welcome among the surrounding nations, and traces of it are found on the continent and in Egypt, with which last country there seems to have been regular intercourse. Nothing, however, perhaps shows the degree of civilization to which the Minoans had attained better than the dress of their women, which may be easily discerned from the statuettes and frescos. It is with a start that we learn that the varied modes of Victorian fashion were in vogue in Europe 4,000 years ago. But so it is. The full skirt with belt and bodice, the tight skirt with "polonaise" and flounces, an exaggerated "toque," wide and curly-brimmed straw hats trimmed with (no doubt, artificial) flowers, the decolleté style of full dress, all had their votaries among the Minoan dames. The men were somewhat crude in this matter, being content with a plaid and short kilt and leather "brogues"—a costume not very dissimilar from that of the Gaelic races in Ireland and Scotland. When we find from Denmark to Transylvania and Servia on the mainland of Europe evidence of similar types of prehistoric dress fashionable in the bronze age and continued down to the present day, the inference of a widespread and comparatively high civilization flourishing even in the remotest ages becomes irresistible. Whether those who affected these costume were Aryans, who can say? Their skulls and skeletons, as they have been disinterred in Crete, reveal mostly a race of moderate height with long heads, but intermingled with this type occur the bones of broad-headed individuals, so that we can only conclude that here, too, as everywhere in Europe, the strain was mixed, and admits of no definite classification as "Aryan" or "Turanian," etc. For their language we must wait till their script has been deciphered.

J. G. C.

THE INDIGENOUS SCHOOLS OF JAPAN.

IT is sometimes forgotten that Japan did not burst into existence ten years ago; that her intercourse with Europeans, for instance, goes back to the year 1542. Even during the long period of seclusion, from 1624 to 1854, a small colony of Dutch merchants was permitted to reside at Nagasaki, from whom there filtered through some knowledge of Western arts and sciences to, at any rate, the leading minds of the ruling class of Japan. But educative as this influence proved in the long run, it did not, any more than the schools founded by the Catholic missionaries of the sixteenth century, exercise any direct effect upon the native educational system. For an educational system there was in old Japan, and one so widely diffused as to supply a very fair starting point for the new era, when this arrived. The indigenous schools were of two kinds, one intended for the *samurai*, the warrior and official class, who were also the scholars because they had most leisure for study; the other for the children of ordinary folk.

To take the latter class first, the common primary schools were known as *terakoya*, from *tera*, a Buddhist temple, because in the earliest times they were associated with the temples, the Buddhist priests of Japan having been as great educators as those of Burma. During the Tokugawa period, however, *i. e.*, from 1600 to 1868, the *terakoya* were maintained by others besides priests, by doctors, for instance, or even by *samurai*, who had fallen into disgrace and been deprived of their hereditary incomes. Every town, in fact, had several *terakoya*, every large village at least one, some of them reckoning from one to three hundred pupils, of whom as many as thirty per cent. might be girls. In a small village, on the other hand, the priest might have ten pupils only, the doctor from five to ten. Some of the schools taught only writing, the pupils kneeling on cushions before low tables, and copying the characters of the two Japanese syllabaries (each of which has 47) with writing-brushes and Chinese ink on sheets of paper which soon became both black and wet, and were then dried for further use. In the process the hands and faces of the children would get "as black as those of demons," and the first care of their mothers, on their return from school, was to get them washed. When a character had been mastered, it was copied fair on clean paper and shown to the teacher, who corrected it, if necessary, with red ink. After the Japanese letters a few Chinese ones were learnt, perhaps a hundred in all, just enough for the commonest names of persons and places. In addition to writing, some schools taught the use of the counting-frame, and even the reading of a little history. As a rule, the children stayed from two to three years, paying a few pounds of rice yearly, perhaps even a little money if they were well off. Discipline was sometimes severe, boys being flogged with a bamboo, or compelled to hold a lighted incense-stick until it burnt their fingers.

Of the *samurai* schools there were three grades, of which the primary and the middle might be found in the capitals of most of the feudal lords, whilst the third grade, a kind of college, was rarer. The *samurai* boy began about six or seven, and spent some five years in the primary school. He started, as in the *terakoya*, with writing and reading the Japanese characters, but he learnt more of Chinese, entire books of a moral or historical character being committed to memory by form and sound before the meaning of the words was explained, a process of learning by rote for which the East seems to have an affection, and which has left its mark upon the Japanese education of even the present day. The boys learnt also the use of the counting-frame, and practised etiquette.

In the middle school the young *samurai* read some more of the history of China and Japan; he learnt how to write letters in various styles; he studied a little more arithmetic. But, above all, he devoted his attention to physical training; to fencing, wrestling, archery, the use of the spear, swimming, and riding. The course covered about three years; the discipline both at school and at home was of Spartan severity. Especially was a boy made familiar with scenes of bloodshed, being taken to witness executions, being taught how to kill himself or anybody else neatly and promptly.

In the schools of the highest grade all this was carried still further, but few of the pupils got so far as this No *samurai*, however, could become a householder unless he had attended at least the primary school. His education was free, except for such presents as he might choose to give his teacher, with whom he often boarded like a son. Girls were commonly instructed at home by private tutors; they were taught writing, music, the composition of poetry, polite etiquette, and physical exercises; they also learned how to kill themselves skilfully if need were. Of religious teaching in the ordinary sense there was little or none; boys and girls alike were taught to do their duty for its own sake, without hope of heaven or fear of hell.

The general effect of this double system cannot, of course, be expressed in exact figures; but practically all the *samurai* (of whom there were two millions) could read and write; and of the rest of the population, about one-third of the males, and perhaps one-sixth of the females. After the abolition of feudalism in 1871, all these schools were swept away, and replaced as fast as possible by primary schools of a more Western type, until to-day they live only in the memories of men fast growing old, or in the mouldering tomb-stones erected to the memory of beloved teachers by their pupils.

W. H. SHARP.

THE BOMBAY SCHOOL FINAL EXAMINATION IN 1904.

THE Director of Public Instruction has written a very full and interesting report on the first School Final Examination held by the Educational Department. Conducted hitherto by the University, this examination has of late received slight attention from either the University or the schools. It did not lead to Government service nor admit to the University, and so the brightest boys preferred to take the Matriculation, and the number and quality of candidates for the School Final declined. But the examination has now been put upon a very different footing. Government has recognised it as qualifying for admission to the lower grades of the public service, and thus given it a definite value. The conduct of the examination has been undertaken by the Educational Department, and a guarantee is thus furnished that it will be conducted in accordance with the dictates of reason and the best educational principles instead of the whims of educational faddists. We think, therefore, that the Director is justified in claiming that public confidence in this examination is being restored, and that the numbers of candidates will rapidly increase. It is true that the numbers were in 1904 much smaller than in 1903 (497 as against 1,054), and this in spite of liberal concessions for this occasion in the matter of attendance at school. But this year practically all the candidates were sent up by recognised schools, while in 1903 only 446 were so, and some had probably left school for a long period. The old examination was, therefore, not a true School Final, and many of the examinees were most unfit candidates. The regulations for 1905 demand residence at a recognised school during the school year, *i. e.*, January to November, and for the future two years' residence is prescribed. The examination will thus be what it was originally intended to be—an examination for students at the close of their school career who do not wish to proceed to a collegiate education, but who require a certificate that they have attained a certain standard of proficiency.

The examination was last year conducted at different centres under the superintendence of the Educational Inspectors and the Principal, Elphinstone High School, each assisted by a local committee. The subjects of the examination were those prescribed formerly by the University, divided into compulsory and optional, the former including Arithmetic, English, a Vernacular, the History of India, and Geography Analysis of the results shows that a little over twenty-five per cent. passed, and that the subjects most fatal to candidates were Geography in the compulsory and Political Economy in the optional subjects. In no subject, however, was there a total failure. In Mathematics the majority of the work was untidy, and the pupils are declared by the examiners to have been instructed on incorrect principles. The English papers revealed too much reliance on 'cram' essay books. The examiners in the Vernaculars, who were all native gentlemen of great knowledge and experience, report that "most of the candidates had no scholarly knowledge of their Vernacular, were unable to explain the meaning of fairly simple verses, appeared to have crammed up grammatical questions from short catechisms, and wrote an inferior hand, with frequent mistakes in spelling and punctuation." There seems to be a consensus of opinion that the Vernaculars are neglected in the High Schools and are not sufficiently studied by the pupils. The same complaints of cram and slovenly work are made by the examiners in Political Economy, Agriculture and Botany.

A consideration of the results and of the examiners' report shows, first, that the examination has already in part achieved its object, and, secondly, that there is still room for improvement. The examination was intended as a test of a fairly good general education calculated to fit a boy for the ordinary pursuits of life, not as a test of mere knowledge. The examiners were instructed to set sensible questions, such as would reveal intelligence as well as knowledge, not merely puzzle the candidates. The Director declares that the papers set were in general fair and sensible and afforded to a reasonably intelligent and properly-instructed candidate every opportunity of success. That only twenty-five per cent. were passed shows that, on the one hand, the education imparted to the candidates is not quite up to the standard demanded by the Department, and, on the other, that the candidates have not yet realised the principles on which the examination is conducted. Accustomed to the old School Final and the Matriculation, teachers and pupils alike seem to have clung to the methods which had proved successful in their case. The slovenly work, of which the examiners complain, illustrates this and justifies the direction to the examiners "to pay great attention to the handwriting, spelling, accuracy and neatness of the work done; gross deficiency in these respects should entail the failure of the candidate, and obvious deficiency should entail the deduction of ten per cent. from the standard of efficiency attained by the candidate." The freedom left to examiners in the matter of marking was another departure calculated to make the examination a test of real efficiency. "The answers of a candidate are to be judged as a whole, and the examiner has to decide whether he has passed or failed, and not to follow a niggling system of so many marks for each question . . . . There is no question of grace marks." This is the only fair way of judging an examination paper, and papers judged in this way, especially when combined with an oral examination, are a more practical and searching test than even the University's Matriculation. To which we may add, in the Director's words: "There is a remarkable consensus of opinion that the test applied to candidates was practically in full accordance with the principles laid down by the Government of India in paragraph 24 of the Resolution on Indian Educational Policy."

That improvements are possible and desirable, is suggested by the examiners' reports and admitted by the Director. The curriculum of the examination was discussed in a conference last March and the changes there recommended have been approved by Government and are to be brought into force in 1906. The examiners reported that it was a waste of time to examine the candidates twice over in English and a recognised Vernacular or its substitute. These subjects, therefore, have been removed from the list of optional subjects in which they constituted Group A.; but they remain as compulsory subjects and the examination in them will be more searching than last year. In English there will be one paper of 1½ hours in composition and one paper of 2 hours in translation and general questions, with an oral test. In the Vernaculars one three hours' paper will be set and the oral test will include reading fair manuscripts as in official documents. In History and Geography a 3 hours' paper will be set and candidates must satisfy the examiners in both subjects. In Arithmetic a 3 hours' paper will be set. In other respects the compulsory subjects remain the same. The list of optional subjects has been radically changed. It was felt that the grouping of subjects was faulty, and that it was better to insist on a thorough knowledge of one special subject than to accept a superficial acquaintance with two. In 1906, accordingly, candidates will take one only of eleven optional subjects, *viz.*, (1) Either Sanskrit, Arabic, Persian or Latin (a 3 hours' paper with an oral). (2) Political Economy (two 2 hours' papers). (3) Book-keeping and Commercial Correspondence, (two 2 hours' papers). (4) Mathematics (two 2 hours' papers). (5) Physics (two 2 hours' papers and a practical examination). (6) Chemistry (two 2 hours' papers and practical examination). (7) Botany (two 2 hours' papers with oral). (8) Agriculture (two 2 hours' papers with oral). (9) Drawing (three papers). (10) Manual Training (a 3 hours' examination in Drawing and a 4 hours' in Practical Carpentry). (11) Short-hand and Type-writing. Proposals to add to these subjects others, such as Physiography and, for girls, Domestic Science, Needlework and Dressmaking are under consideration. Comparison of the curriculum of 1906 with that of the two preceding years shows that while, with the exception of Short-hand and Type-writing, no new subject has been imposed on the schools for study, the burden of the examination has been lightened by allowing the candidates to take one optional subject instead of two. But the examination has been rendered more thoroughly searching by lengthening the papers in some cases and substituting two papers for one in others. No text-books are prescribed and so no excuse is available for cramming. The student is left free to acquire his knowledge from the best sources and by the best methods.

PUBLIC INSTRUCTION IN CEYLON, 1903.*

Population.

Males and Females ... ... 3,565,954.

Schools 3,738, of which 1,755 are unaided. Scholars 238,259, or one scholar to 15 people. There has been an increase of 11,852 scholars.

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* Report of J. Harwood, Esq., Director of Public Instruction, Ceylon.

Total expenditure, Rs. 10,38,652. The average cost to revenue of each pupil in a Government School was Rs. 5·37. The average grant was Rs. 3·81.

Higher Education.

The Royal College had an average attendance of 284. Three students were commended by the Examiners for University Scholarship. The Scholarship was awarded to G. E. R. Arndt. The Classical Examiner recognised "some sense of style." The English Examiner noted a tendency to quote passages of criticism from memory without comment, and ignorance of scansion. Other examinations :—

	Appeared.	Passed.
London Matriculation (January) ...	2	0
„ „ (June) ...	8	2
Cambridge Senior Local (Boys) ...	170	89
„ „ „ (Girls) ...	20	15
„ Junior „ (Boys) ...	328	133
„ „ „ (Girls) ...	101	42

Only 40 per cent. of the Junior Candidates passed.

Negotiations were carried on with a view to placing higher education in direct connection with the London University courses in Arts and Sciences. The chief difficulty lay in the want of proper laboratories in the Ceylon Colleges and Schools. Dr. Osborne of Melbourne was deputed by the London University to inspect the laboratories, and his proposals were under consideration at the close of the year.

The Committee of Oriental Studies, organised in 1902, held its first preliminary examination in Sanskrit, Pali, Sinhalese, and the History and Archæology of Ceylon, and 23 Candidates passed.

English Schools.

Schools 174, pupils 22,611, boys 18,795, girls 3,816 (an increase of 12 schools and 1,221 pupils). The number of properly-qualified teachers is inadequate, owing to poor pay and want of training institutions. Hence the work is often inferior. Reading and handwriting are poor ("bad paper is largely used"); composition begins too late; arithmetic is often untidy, inaccurate, and mechanical. The Inspector protests strongly against the time spent on individual examination of pupils, and urges a change to inspection proper and lump-sum grants.

Vernacular Schools.

Schools 1,770, boys 121,250, girls 48,839. The pupils attending Vernacular Schools are about 80 per cent. of the total number now attending Government and Aided Schools. The number of children receiving no education is declared not to be so deplorably great as some have supposed. But in some provinces the schools are not well-distributed. The average attendance continues to increase though at a slower rate. School Treats and Prize Distributions have been organised with considerable success.

Training Schools.

The Government Training College made a start in January 1903, under Mr. E. Evans, B.Sc., London. Twelve students were admitted for a one year's course, of whom ten passed. In future the course will be one of two years. In the Certificate Examinations, the proportion of teachers who passed appears rather small; *e.g.*, for the second class Vernacular Teachers' Certificate there were 95 male and 5 female candidates, of whom only 9 males obtained the certificate.

Technical and Industrial Education.

The Technical College has upwards of 200 students and is being enlarged. The evening classes for non-members of the College recently established have been used by some 40 students. There are 35 other Industrial Schools. "The Technical and Industrial Education really required for the greater part of the population of this island is one which will fit them for rural and agricultural life. No less than 88 per cent. of the population of Ceylon is rural population." A scheme for school gardens aims at creating a taste for gardening and knowledge of the proper method at encouraging nature study as an essential part of school education, and familiarizing the rural population with useful products not grown so extensively as they should be. "Excellent progress has been made towards the attainment of the first and third of these ends."

Female Education.

Girls under instruction 63,030; girls of school-going age 250,461. Some 25 per cent. of the female population get some sort of education. The girls are unequally distributed; in the Western Province they almost equal the number of boys, in the North-Central Province there are only 219 girls at school. A wholesale measure for compulsory female education would be unwise at present. But female education is the only remedy for the harm which is being done in some provinces, *e. g.*, the Matara District, by a marked growth in prosperity unaccompanied by any development of the refining influences of home life or by any additional care in the home training given to children, with the result that increasing wealth has brought with it a startling increase in crime. In the Kandyan Districts female education is still regarded with strong dislike and distrust, from the idea that it will upset the traditional customs of home life and make women unable or unwilling to perform domestic duties. The Director regards a good training in needlework as a first essential to fitting girls for home life and, therefore, welcomes the appointment of an Inspectress of needlework. In all Government schools and aided schools under male management, he says, the needlework is so bad as to be nearly worthless. Girls education in Ceylon is mainly carried on in girls' schools, and the Director holds that "mixed schools are not suited to the East and that the wholesome influence which results from the education of girls, disappears when it is carried on by means of mixed schools."

Education of Special Classes.

Estate Schools 43 (41 aided), with 1,765 pupils. The Director urges the necessity of limiting the estate work of cooly children if they are to obtain the minimum education, and thinks the cost of their education should be thrown on the coolies themselves, since they earn good wages. He finds the real solution of the question in the establishment of a special class of schools for the estate cooly with a syllabus framed to meet their requirements.

Mohammedan pupils number 4,451, or 1 in 55 of the Mohammedan population. Government Schools for Mohammedan girls have not been a very great success.

THE NEWS OF THE MONTH.

BENGAL.

THE annual meeting of the Senate of the Calcutta University was held on April 15th, when the report of the Syndicate and the accounts were read and adopted. Mr. Kali Churn Banurji was appointed Registrar. The Registrar reported that the Government of India had allotted Rs.2,00,000 out of the special grant of five lakhs to University and collegiate education, and that the Governor desired that Rs.5,000 should be employed for payment of travelling allowances of Fellows residing in the mofussil; Rs.15,000 for the initial expenses of inspection of colleges; and the balance of Rs.1,80,000 for the acquisition of land for the use of the University. On the recommendation of the Syndicate, the Senate appointed a committee to select a suitable site in the neighbourhood of the Senate House for extending the University premises.

The Bengal Provincial Mahomedan Educational Conference was held at Tipperah on April 25th. The President, Mr. Syed Mohamudin Nabi, sketched the history of Mahomedan education in Bengal, and contrasted the progress made in the Punjab with the inactivity of Bengal. There had been some awakening of interest in education since 1887, but Mahomedans were lagging deplorably behind. He thought the education imparted in India unsuited for Mahomedans in respect of the absence of moral and religious training, but the remedy for this lay with Mahomedans. The Aligarh College must become a Mahomedan University, and in every district of Bengal Muktabs and schools, giving both secular and religious teaching, must be established. He then went on to urge the importance of industrial and technical education. Several resolutions were passed, and Rs.10,000 were subscribed on the spot for a Mahomedan boarding house at Comilla. The feature of the day is said to have been a speech on "Islam and the obligation it has laid on the world" by Mrs. Aziz, a young Mahomedan English lady, recently arrived from England. At her entrance the whole assembly stood up.

At the Bengal Provincial Conference the President, Mr. B. Nath Basu urged that the Government of Bengal did not contribute an adequate quota to the cost of education, and that education should be compulsory and free. He then went on to make the usual denunciation of the reorganised Senate and Syndicate as too official, and to deal with the competitive test and the employment of Indians in the public services. He did not omit to urge the responsibility of individuals to encourage education by gifts of money.

The recommendations of the Committee on primary school education continue to provoke criticism. One letter points out that the conversion of lower primary to rural schools will be injurious to a fairly large number of children of non-agricultural parents who attend such schools. It also argues that literary Bengali is the established language of the agriculturist in his dealings with the landlords, grain-dealers and the law, and the adoption of local dialects would hamper him.

On April 29th the foundation stone of the Cooch Behar Victoria College was laid by the Maharajah.

The question of the education of cooly children in the tea-gardens of Assam has been taken up by Mr. Brodrick and Sir Muncherjee Bhownaggree. The coolies are mostly Sontals, Hos, Kols, Mundaris and others of a similar type. They have no written language of their own, and would have to be taught through Assamese. They come from the Central Provinces, and it is said that more than one-half settle in Assam. They there receive no systematic education, though some planters have schools on their estates. Some 242,198 children appear to be employed on the estates.

BOMBAY.

At a meeting of the Senate on April 7th Sir Jamsetji Jejeebhoy, Mr. K. S. Aiyar and Dr. C. D. Saraya were elected members of the Provisional Board of Accounts. It was agreed that candidates in Civil Engineering should be required to pass the examination in Art Drawing and the First and Second examinations in Civil Engineering, and that for the degree of Licentiate of Civil Engineering. Candidates in 1905 to have the option of following the old or new regulations. An offer of Rs. 10,000 was accepted from the Ibrahimbhoy Rahimtoola Khoja Testimonial Fund to found a scholarship to be awarded to the highest among Khoja Mahomedan candidates at the Intermediate Examination. The scholarship is to be tenable for one year and is conditional on the holder prosecuting his studies at a recognised college. Failing a Khoja candidate, last year's holder is to hold it for a further period of one year. Lastly, eight committees were appointed to draft regulations in respect of the constitution of the Faculties, the appointment of Fellows, the Registrar, examiners, etc., procedure at meetings, inspection of colleges, conduct of examinations, etc.

The annual general meeting of the members of the Bombay Scottish Education Society was held on April 13th. The report stated that there was progress in all departments of the schools, which were now in a better position than they had been for several years past. The Byculla School had materially improved under Mr. Wilkinson's charge, and the condition of the John Connon School was no less satisfactory. All six pupils sent up for the Matriculation examination last year were successful. A considerable sum had been spent during the year on equipment, and the debt had been reduced. The Principal and his staff had worked unsparingly and enjoyed the confidence of children and parents.

On April 22nd Mr. Kennedy, Commissioner of the Northern Division, laid the foundation stone of the Nusserwanji Maneckjee Petit Bandra Municipal School for girls. The school was originally a Local Board one, and later taken over by the Bandra Municipality. The new buildings are now being provided by the generosity of Bai Avabai F. Petit, who has given Rs. 10,000 to which the Municipality added Rs. 10,000 and Government Rs. 20,000. Mr. Kennedy described the school as the first attempt to popularize secular education in Bandra and hoped that the institution would be also used as a public lecture and library room.

The first annual social gathering of past and present students of the Madrasi-i-Anjuman-i-Islam was held on April 30th, Mr. C. U.L. Rosselet, the Principal, presiding and about four hundred being present. Races, refreshments and music formed the entertainment. Several speakers expressed hopes that Mr. Rosselet, who has only recently been appointed, would be able to bring about a decided improvement.

In distributing the prizes on April 15th at the Palanpur High School, Major Merewether, the Political Agent, congratulated the school on its excellent report, and expressed regret that the Palanpur State was not able to find employment for all the B. A. and L.L. B.'s that it produced, but hoped that it would continue to try to engage them.

The Indian Universities Commission recommended that the Vernacular languages should be introduced in combination with English at the M.A. Examination, and that the University should establish professorships in the Vernacular languages for teaching advanced courses. Accordingly Mr. Setalvad asked Government whether any provision had been made in Government colleges for teaching the Vernaculars to M.A. students. The heads of the two Government colleges were consulted, and gave it as their opinion that it was not necessary at present to make provision for teaching the Vernaculars. The Principal of the Deccan College wrote: "It is a question whether such expense should in any case fall upon Government. In Poona there are two colleges, and in Bombay three which prepare students for the M.A. degree, and obviously it would be a waste of money to supply to each college a lecturer in Marathi, Gujarati or Kanarese. The students of the various colleges could attend one set of lectures available for all. Thus the lectures would be in a sense University lectures, and it would, I think, be the duty of the University to provide for such teaching from its available funds. Such a view might not be accepted by the University, and in that case the cost of instruction might, by common consent, be divided among the colleges concerned, a substantial fee being taken from the students for the special instruction received. But the necessity for such instruction has not as yet been in any way demonstrated, and I am of opinion that, should a demand be put forward for such instruction, Government should obtain the opinion of the Syndicate of the University on the question before coming to any decision." In accordance with this opinion, Government have resolved "that the matter is one for consideration by the Syndicate of the University," and the question is now one of the many important ones to which the reformed University must find an answer.

BURMAH.

The Sam Buddha Ghosa School was established in 1899 by the Sasana Dhara Society, Moulmein, a society with social and educational aims. The school has now increased, till it has become necessary to erect new buildings, the cost of which has been provided by subscriptions and a Government grant of Rs. 11,000. The Governor has also sanctioned the remission of the usual departmental charges. A boarding apartment is to be opened, to which not only pupils of the school, but young employees of different offices and firms will be admitted.

Furlough till the 10th December 1905, in continuation of the two months' summer vacation, which commences on the 30th March 1905, is granted to Mr. E. D. Marshall, M.A., Principal, Rangoon College.

CEYLON.

The Revised Code for Aided Schools for the current year was issued as a supplement to the *Government Gazette* of the 14th April, but the new provisions do not come into operation till the 1st of January 1906. The amendments are few. In large vernacular schools applying for registration the teacher is not compelled to hold an English Teachers' Certificate. If he holds a Second Class Vernacular Certificate, he is qualified if he passes the former Certificate examination in four specified subjects. A more important amendment relates to certificates to teachers in girls' schools. A second class certificate will be issued to any headmistress of a middle school who has served three years and earned 50 per cent. of passes at each annual inspection, provided that ten girls at least have been presented each year in the middle standards. First assistant teachers of long standing are to have their cases submitted to the Director for consideration.

The Order of Merit List in connection with the last Cambridge Locals has been published. The first exhibition for boys has been won by S. John's School, Panadure, the second by S. Thomas's College, Colombo, and the third by S. Joseph's College, Colombo. The Senior Scholarship for girls and the first junior exhibition have been won by the C. M. S. Ladies' College, and the second junior by a private student. The Ceylon mathematical prize has been awarded to a pupil of S. Thomas's College, who gained first place in distinction for mathematics in the Senior Local.

Some dissatisfaction is expressed at the provision for Mathematics in the new arrangements for the University scholarship. It is pointed out that of the seven sections in the Intermediate Examination in Science only two are mathematical, The scholarship cannot be won on mathematics alone, but it can be won on science alone ; hence the students of the Medical College can more easily win it than any other student. Besides, the requirements for mathematics are lower than in the Senior Local, so that the teaching of mathematics will be discouraged and some of the higher branches now taught will be abandoned. Meanwhile, it must be noted that the precise details of the ground to be covered by the higher papers in classics and mathematics have yet to be approved by the Board of Education.

His Excellency the Governor contributed a short paper to the Ceylon Branch of the British Medical Association on Ancient Theories of Fever and the Mosquito. Certain passages in ancient Sanskrit works attributed malarial fever to the bites of the mosquito. Of the sixty-seven varieties of mosquito mentioned some forty have been identified in Ceylon. The Association has appointed a Committee of Inquiry on the subject.

The second annual examinations in Oriental studies began on the 24th April at three centres—Colombo, Kandy, and Galle.

An enlarged photograph of Mr. S. M. Burrows, lately Director of Public Instruction, has been hung in the Educational Library of the Director of Public Instruction's Office. It was presented to the Library by an ardent admirer.

Warden Stone of S. Thomas's College, Colombo, and Dr. Chalmers, Registrar of the Medical College, have left for England on a short holiday.

According to the *Times*, Mr. Lyttleton has announced that the Governor of Ceylon has recommended the appointment of a Commission to deal with the whole question of the education of Tamil coolies. The members of the Commission are Messrs. Wace, Harward, Highfield, Jayatilleke, and Huxley. Mr. A. S. Wise, who is a leader of the movement, writes that similar movements are going on in Assam and Malay. Of Assam we have already spoken. Of Malay he writes:—" You may be interested to know that a Conference of Residents in the Federated Malay States was recently held, at which the following resolution was passed :—

'That it is advisable that facilities should be afforded to the children of Tamil immigrants to acquire a knowledge of their vernacular language, with the object of making the Federated Malay States, from the point of view of the Indian immigrant, an outlying portion of India, like Ceylon.'

Steps have already been taken, I understand, in Perak to carry this resolution into effect by opening Tamil schools at Taiping and at Parit Buntar, the two chief centres of the Tamil population."

MADRAS.

The annual meeting of the Mahomedan Educational Association of South India was held at Madras on April 24th, Mr. Justice Boddam presiding. The report showed that the sum of Rs. 6,734 had been received and that useful work had been accomplished. Mahomedans had been fairly successful at the public examinations. Mr. M. A. Hussain read a paper on " The Present System of Mahomedan Education," in which he criticised the early education of Mussalmans, saying that habits of regularity, cleanliness, and truthfulness were not inculcated, and that boys grew up in ignorance of their duties to their God, their king, and their fellow-countrymen. He quoted the words of Aurangzeb to show that their system of teaching had long been condemned. The chairman's speech was rather pessimistic. He said that the educational returns showed little or no progress among Mahomedans. The Association received little support. Only Rs. 14,000 had been collected since its foundation in 1901, while two lakhs were required, and of the former sum only Rs. 7,982 had been subscribed by Mahomedans. The Mahomedans were a grateful race, and if they would suitably display their gratitude to the Governor on his approaching retirement, they would have an opportunity to do something great for education.

On April 25th was held the annual general meeting of the Victoria Technical Institute. The report stated that the library of the Institute had been transferred to the Connemara Library. Government had allotted a site near the Museum and Connemara Library, to which it will form a very suitable adjunct. The buildings, it is hoped, will shortly be commenced, and are said to be of beautiful design costing about one lakh. The Prince of Wales will probably be asked to lay the foundation-stone during his visit to Madras next February. A Central Agricultural Committee is to be formed and other Committees for other special local industries are proposed. The Institute will have about Rs. 2½ lakhs at its disposal after the building has been paid for.

The Madras Teachers' Guild held their annual meeting on April 29th. The report stated the number of members at 180, and said that the library had been re-arranged, a set of special reports on English education added to it, proposals for a Provident Fund made, and a fund for a memorial to the Rev. F. W. Kellet raised. Mr. Hoare urged that, instead of trying to start a Provident Fund, the Guild should press Government to have such funds started on all the larger schools. He also advised the Guild to take over and work one of the existing educational journals, and to take as the subjects of its discussions practical questions of present interest.

The Madras Government has recently sanctioned estimates and proposals for the establishment at Coimbatore of a training school for deputy rangers and foresters. The estimated expenditure will be Rs. 10,000, and Mr. V. S. Gurunatha Pillay, Extra Assistant Conservator, has been appointed to the charge of the school. The subjects taught will be elementary survey, demarcation, fire protection, supervision and execution of works, and the elementary principles of sylviculture. A studentship under the Tata Education Scheme has been awarded to Mr. B. Sanjiva Row, B.A., a student of the Presidency College, Madras, to enable him to undergo a course of studies in England. Mr. Sanjiva Row is a native of South Canara, and is only twenty years of age. He had a distinguished career in the University and now intends competing for the Indian Civil Service.

During the absence of Mr. J. B. Bilderdeck, on leave, Mr. H. J. Allen (Barrister-at-Law) will act as Principal of the Presidency College, and Mr. H. S. Duncan as Professor of English.

At the annual prize-giving at the Victoria College, Palghaut, the students acted Shakespeare's *A Midsummer Night's Dream*, the curtains and scenery having all been arranged by Mr. Barlow, the Principal.

PUNJAB.

Sir Charles Rivaz has, on the recommendation of his educational adviser, Mr. W. Bell, C.I.E., sanctioned a grant of Rs. 10,000 to the Victoria Diamond Jubilee Technical Institute of Lahore for buildings and appliances. A permanent grant of Rs. 100 per mensem has also been made to the same institution. The assistance thus given will enable the Board of Governors of the Institute to complete their equipment for the teaching of practical and applied chemistry, which they have decided to add to their curriculum.

A conference on commercial education met in Lahore on April the 10th under the presidency of the Hon'ble Sir David Masson. The subjects for discussion included criticism of the present curriculum and details of the changes proposed therein ; the proposed measures to be adopted for obtaining students and for the training of teachers ; the preparation of text-books; the employment of successful candidates ; the staff of a central school or college ; the establishment of an Advisory Committee or Chamber ; scholarships and stipends ; and evening or continuation classes. The members of the Committee included serveral men of business, European and Native, in this Province, and some officers of the Education Department. Much useful information was elicited, and a report is being drawn up.

An important conference of nearly forty ladies and gentlemen, official and non-official, experienced in, or in any way interested in, the promotion of female education in the Province has been summoned by the Punjab Government and met in Lahore on May 8th. The following were the chief questions submitted for discussion at the conference :—How is inspection to be provided for in outlying districts? Should the school year be uniform throughout the Province ? What changes are required in the scheme of studies ? How to secure suitable courses of reading for girls ? Are casual students desirable in girls' schools ? Should an Anglo-vernacular curriculum be provided ? How to develop home education classes ? Should Indian Christian girls be encouraged to read for the European schools examinations ? Should special courses of instruction and grant-in-aid rules be framed for the education of low caste village Christians ? How far should Roman Urdu and Roman Punjabi be recognised ? What changes are required in the grant-in-aid rules ? What changes are required in the rules for the award of scholarships and stipends ? How are local associations, religious or charitable, to be encouraged to extend female education ? How to secure more female teachers ? How and where to establish Government schools for girls ? What other steps should be taken to promote female education in the Punjab? Mr. W. Bell, C.I.E., Director of Public Instruction, presided over the conference. Immediately after, a departmental conference was held mainly linking up the rural with the Anglo-vernacular schools.

A fire destroyed the main buildings, chapel, and library of the Bishop Cotton School at Simla, on May 7th. It arose in the kitchen from an oil cooking stove. Fortunately the fire broke out in the afternoon not at night, and no lives were lost. The school is said to have been insured.

The authorities of Dayanand Anglo-Vedic College, Lahore, have made arrangements for teaching the Japanese language. The teacher selected is Mr. Goto, a graduate of Tokio Imperial University, who has already arrived there. Indian students proceeding to Japan to receive technical education, had to spend nearly a year in that country in learning its language, and the arrangement in question is intended to obviate this and to enable such students to acquire a competent knowledge of Japanese in India.

Mr. Knowlton's report on the schools of Patiala shows that they are in a very unsatisfactory state. The schools are conducted in all sorts of buildings however insanitary. In one school seventy-six boys are said to have been crowded into a room fit to accommodate only sixteen. Most of the school rooms are badly lighted and worse ventilated. Mr. Knowlton had, in some cases, to take the boys into the open air to examine them, so foul were the rooms of the school. The services of a Native Member of the Provincial Educational Service has been lent to the State for employment as Director of Public Instruction to enable the Durbar to reform its Educational arrangements.

Sir Denzil Ibbetson, presiding at the prize-distribution of the Punjab Veterinary College, Lahore, spoke in terms of high praise of the work of Punjabi Veterinary students in all parts of the Empire, but pointed out that in the Punjab there was only one Veterinary officer for every 130,000 head of cattle. There ought to be at least a Veterinary hospital in every considerable town, and a travelling dispensary in every tahsil. There were plenty of candidates for admission to the college, but not room for them all, which showed that the training was valued. He reminded his hearers that their chief care was the cattle of the villagers, and that it was their duty to travel about seeking for opportunities of assisting the villagers by their skill. If it was hard to convince the people of the value of their knowledge and treatment, they must not be careless or idle, for then they would never convince the villagers, but do harm by setting them against veterinary aid.

At the Westminster Palace Hotel, London, an 'At Home' of the Aligarh College Association was held to welcome Mr. Morrison and to meet Mr. Archbold, the new Principal. Replying to the cordial reception he had received, Mr. Morrison said that looking back at his years of service he could see very distinct progress in the attitude of the Moslem community to Education. The new spirit would lead to generosity in new directions, and gifts to the cause of education would be recognised as commendable as costly offerings to shrines or pilgrimages to Mecca. Mr. Archbold said that it would be his duty and his pleasure to maintain the Aligarh College on the same lines as its founder and his two predecessors, and that he could not but be stimulated by the enthusiasm for the College which was being awakened among its friends in England.

UNITED PROVINCES.

The School Board of the Wynberg Institution in Mussoorie is appealing to Christians for pecuniary aid to enable it to repair the damage done by the recent earthquake to the buildings of its training school and orphanage. A stone dormitory requires to be re-built from the foundation, and extensive repairs are necessary to two other buildings. There are about one hundred children in the institution, and the funds in hand are inadequate to cover the cost of the repairs.

The transference of the Philander Smith College from Mussoorie to Naini Tal, and its amalgamation with an institution at the latter place has been successfully accomplished.

The Principal of the Meerut College, writing to the *Pioneer* to ask for donations to the College, says that its authorities have now acquired the buildings and grounds which they have hitherto occupied on lease. New buildings are contemplated. ".The Nanak Chand School will shortly be commenced, and will be a fine structure. Money is coming in for the Hindu and Mahomedan boarding houses, and some of the rooms should be completed by next session. It is hoped that the Jains will follow suit, and will provide a boarding-house for the youths of their community. Each room in a boarding-house will cost Rs.500, and those who contribute this amount will be entitled to have one erected in their name. Contributors towards the Endowment Fund of Rs. 500 and upwards will have their names inscribed round the main hall of the new College building.

Meanwhile new rooms for thirteen boarders have been added to the old boarding-house and more are to be commenced immediately.

The Government has promised substantial aid as soon as the people of the division shall have come forward with sufficient subscriptions to justify their action, and already Rs. 16,000 have been promised. L. Ramanuj Dayal, the Honorary Secretary, has presented the College with part of a village valued at Rs. 10,000, in addition to endowing a scholarship on oratory of Rs. 10 per mensem for two years, and other gifts.

It is proposed to build a hostel for students of the Canning College, Lucknow, in the Badshah Bagh, recently presented to the College by the Maharajah of Kapurthala. A correspondent of the *Pioneer* suggests that, in place of building a new hostel in Lucknow, it would be better to invest in a suitable building in Naini Tal, with ample playing grounds, by amalgamation with the Naini Tal Diamond Jubilee High School. Another correspondent writes that this proposal, if carried out, would mean that the students and professors of the College would lose their vacation, their work at Lucknow being succeeded by work at Naini Tal, and further that it would involve heavy expense.

GENERAL.

The new form of agreement to be signed by all parties receiving Government grants for educational buildings does not appear to meet with the approval of Missionary Societies and the Council of Aided Education. The nature of their objections may be illustrated by the following extract from an article by a Missionary Educationist in the *Madras Mail.* "Some of the educational institutions which are affected by the proposal can count more years of service in India than twice, or even three times, that of the most senior Member of Council, and while it may not have been as honourable in one direction, it has nevertheless been honorary service, for which not even a Kaisar-i-Hind Medal, far less a K. C. I. E., has been, or indeed could be, awarded. The new form of agreement completely ignores the past and deals only with the present. There is, for instance, a certain mission with the record of a century's work in this Presidency, which has had a High School in one of its stations for a period of fifty years. During the whole of that period it has assisted the Government in the matter of education, by carrying on the work in buildings towards which the Government have never contributed a pie. Suppose it now wishes to erect a new building for a sum, say, of Rs. 30,000. It may expect a grant from Government of Rs. 10,000, and it will have to find Rs. 20,000 itself. It can only obtain the grant, however, under the new rules, by signing an agreement which hands over to Government the new building, together with the title deeds to the land, on which there is additional property to the value of at least another Rs. 30,000. Its past fifty years of service in the cause of education is thus completely ignored, and it is treated on exactly the same lines as though it were starting an institution for the first time, and had absolutely no educational credit to show. . . . . The Missionary Societies are not on the same footing as private individuals. Many of the larger and old-established Societies are in receipt of grants from Government, which would guarantee the Government many times over for any grant for building purposes which might be regarded as having been misapplied. This money is in the shape of educational grants for the current year, a deposit in the Government Treasury, available and at the disposal of Government, and which the Societies concerned would willingly agree to make forfeitable. Under such circumstances the handing over of their property to Government is like mortgaging their buildings to the Bank with which they do business, when the Bank has always a balance in hand, and to the credit of their customer, which covers over and over again all his liabilities to the Bank. The proposal, therefore, is as unnecessary as it is vexatious."

On the motion to adjourn the House of Commons for the Easter Recess, Mr. Schwann drew attention to the state of education in India, which he contended was behind the times. The population of India was 245,000,000, and there were only 4½ million persons in the educational establishments of the country, the entire expenditure on whom was not more than £1,300,000. Expenditure was required if they were to promote education in India, and he would impress on the Government the necessity for supplying this acknowledged want.

Mr. Brodrick assured the honourable member and the House that those who were responsible for the finances of India realized the importance of giving a fresh stimulus to primary education. Up to a certain period the increase in attendance and the elevation of the general standard was in as great a proportion as, perhaps a greater proportion than, the progress of India in other directions. In 1870 there were 16,400 schools with 617,030 scholars in attendance. In 1881 the numbers had increased to 83,000 and 2,601,000 scholars. But after that date the rate of progress was not so great; for, between 1881 and 1901, the number of schools had only been raised to 83,950 and the scholars to 3,268,000, whereas it was computed that there were something like 18,000,000 children in India of school age. The expenditure on primary education in 1891-2 was 49½ lakhs, but in 1901-2 it was 63 lakhs. For the last three years the Government of India had given the local Governments 40 lakhs annually as grants to general education, but, in the recent Budget, following the observations that were made in that House last year, an additional sum of 35 lakhs was included for primary education alone. He found himself in sympathy with much that the honourable member had said with regard to female education. A rate of seven per thousand females receiving education was in itself a most lamentable state of things. In the moral welfare of children the education of the mother was perhaps a more important consideration than the education of the father, and by the establishment of primary girls' schools in important centres, and by increasing the number of training schools the Government of India were doing what they could to promote female education, and to popularize that which was in itself most desirable. The honourable member might rest assured that there was no apathy in this matter either on the part of the Government of India or of those who controlled the finances of India.

GEOGRAPHICAL NOTES.

BY

W. H. ARDEN WOOD, M.A., F.R.G.S.

An article in the *Edinburgh Review* for April, entitled "Earthquakes and the New Seismology," gives an able summary of the most recent contributions to our knowledge of the subject, and concludes with the following suggestive and striking paragraph:—

"Earthquakes are a sign of planetary vitality. They would seem to be characteristic of the terrestrial phase of development. Effete globes like the moon can scarcely be subject to the stresses to which they are due; nor can they be very suitably constituted for the propagation of elastic waves. Inchoate worlds, such as Jupiter and Saturn, are still less likely to be the scenes of reverberating concussions. Their materials have not yet acquired the necessary cohesion. They are pasty, or fluid, if not partially vaporous. On the earth the seismic epoch presumably opened when, exterior solidification having commenced, the geological ages began to run. It will last so long as peaks crumble, and rivers carry sediment; so long as the areal distribution of loads fluctuates, and strains evoke forces adequate for their catastrophic relief. Our globe is, by its elasticity, kept habitable. The separation of sea from dry land is thus and no otherwise maintained; the alternations of elevation and subsidence manifest the continual activity of this reserve of energy. The dimensions of the globe we inhabit depend upon the balance of pressure and expansiveness. Relaxation or enhancement of either instantly occasions a bending inward or arching outward of the crust. Just by these sensitive reactions the planet shows itself to be alive, and seismic thrillings are the breaths it draws."

* * * *

Dr. C. R. Dryer, professor of geography in the Indiana State Normal School, and writer of one of the best of the newer text-books on Physical Geography, made some interesting remarks upon the practical teaching of geography at the annual meeting of the English Geographical Association. After mentioning the gradual improvement in the position and teaching of geography in America, he dwelt on the importance in geography of practical work, and described the system followed in his own classes. For the study of land-forms a collection of common minerals and rocks, a large number of topographical maps in which relief is shown by contour lines, some good models, and views both as photographic prints and lantern slides, are required.

The atmosphere is always available for practical study. A child can easily learn to read a thermometer and to make simple meteorological observations. Each of Dr. Dryer's students keeps a three months' weather record, and studies local conditions with reference to the published Weather Reports. Field excursions he considered the most important of all forms of practical work, though it was difficult at first to get the best value out of them owing to the helplessness of the ordinary student, and the feeble development of his powers of observation.

In the discussion which followed many teachers complained that under present conditions it was impossible to secure sufficient time to teach the subject properly. As to practical work in schools, methods were suggested whereby some conception might be given of the units used by geographers; the value of map-reading in the field with a model and with views was insisted on; and various ways of modelling, exercises with the globe, observations of the sun and of meteorological conditions, and of the distribution of different kinds of trees, etc., were discussed.

* * * *

During the course of the topographical survey of the Selkirk range in the Canadian Rocky Mountains, experiments have been made in the photographic determination of the altitude of four of the great peaks visible from points in that range. The method was checked by trial observations of a peak whose height had already been determined trigonometrically, and the mean result was found to be accurate to within 30 feet. The values obtained were: Mount Columbia, 12,740 feet; Mount Bryce, 11,686 feet; Mount Lyell, 11,463 feet; Mount Forbes, 12,075 feet.

* * * *

Now that the Russian fleet has reached the South China Sea, it is of interest to consider the geography of its possible future movements. At the northern end of the South China Sea is the Japanese island of

Formosa, separated from the mainland of China by a channel 100 miles wide, in which lie the Pescadores Islands, a group of twenty-one small islands. Here is an outpost station of the Japanese fleet; if the Russians mean to fight their way to Vladivostok they will probably try to force the Formosa Channel. If they succeed in this, they will find themselves in the East China Sea, at the northern end of which is Korea Strait, over 100 miles wide, with several islands in it, between Korea and southern Japan. Through this strait, at the very door of Japan, they must pass in order to enter the Japan Sea, on which, about half-way up the mainland coast, stands Vladivostok.

If, on the other hand, as some think, the Russian fleet wishes to get to Vladivostok without a fight, it will probably make for the open Pacific, passing between Formosa and the Philippine Islands and sail north to the Sea of Okhotsk, giving Japan a wide berth. La Perouse Strait, between Sakhalin Island and northern Japan, connects the Sea of Okhotsk with the Japan Sea.

But while the Russians were making this wide detour, far away from any base of supplies, the Japanese could easily reach La Perouse Strait from the Japan Sea. The strait is only from 25 to 29 miles wide, and the sea-jaded Russians would certainly be at a disadvantage in attempting to force a passage. After all, if the Baltic fleet is to be of any use whatever to the Russians, its best policy would seem to be to fight the Japanese fleet as soon as possible, and as near the Korea Strait as it can get.

SCIENCE NOTES

BY

WILLIAM JESSE, M.A., F.Z.S.

THE terrible and totally unexpected disaster at Dharmsala and in the neighbouring districts has once more aroused the interest of geologists in the seismic characteristics of the Himalayas, more particularly as regards its western limits. It has been believed hitherto that, in this great chain and its attributes, volcanic and seismic phenomena were either extinct or in a state of permanent quiescence. Earthquake shocks are, of course, of frequent occurrence, but they are so rarely of any intensity that but little notice is taken of them by the ordinary person. In countries like Japan, Central and South America, etc., where severe tremors are felt almost daily, houses are specially constructed, and, on the very first warning, every inhabitant is out of doors. The recent earthquake was so severe that people had but scant opportunity to save themselves or their friends; nevertheless the total unpreparedness of both natives and Europeans probably accounted to no small extent for the heavy loss of life on this occasion. It is impossible at the present moment to sift from amongst the various rumours the true from the false. Serjeant-Major Hives, Punjab Light Horse, on his return to Amritsar, on April 19th, from Palampur, reported that the roads for miles around were split open, leaving hardly a pathway one foot broad in some places, and that they looked as if they had been blown up by dynamite. Mr. Hives said that the mountains had been dislocated in all directions, and owing to the melting of the snow huge boulders weighing hundreds of tons each are gradually sliding downwards threatening the adjacent villages with destruction. A volcano, too, is said to have become active near the shrine of Jowala Mukhi, which is erupting molten lava from its crater.

* * * *

The question as to how the plague is spread continues to cause the greatest perplexity. The occurrence of dead rats and squirrels before an outbreak of the disease has seemed to point to a direct relation between the two. Many doctors hold that the agency by which the disease is spread is the flea. Dr. E. E. Klein, who has been trying to get an answer to the question, has come to the conclusion that, though the flea may act as carrier, it is not the most common method. "After keeping, on numerous occasions, the rats in the same cage for some time in order that their initial fright might cease, one of the animals was inoculated with plague, from which it subsequently died, but in no single instance has the healthy rat succumbed to the disease until long subsequently, to test its susceptibility, it was inoculated and died. Moreover, the rat first inoculated has, in numerous instances, had opportunity of infecting, by means of its fleas, the rats kept in adjoining wire cages; but here again, no such flea-borne transference has ever been observed."

Dr. Klein seems to think that the chief cause of infection is by means of the numerous wounds which, as a rat is a most quarrelsome beast, are always to be found on their bodies. These scratches and cuts get soiled by the excrement of plague-stricken animals, inoculating the healthy with the disease.

* * * *

Some time ago Dr. Doyen, the celebrated surgeon, has expressed his intention of going to London and delivering a lecture on the subject of cancer and its treatment. Interviewed, Dr. Doyen said that a committee of doctors from the Cancer Hospital in London are now in Paris studying his system. Dr. Doyen also confirmed the statement that the French Academy of Medicine had twice refused to hear his report on the discovery of the coccus neoformans, or cancer microbe. The reason assigned was that the Surgical Society had appointed a commission to enquire into his researches; there was no necessity for the Academy of Medicine to interfere. Dr. Doyen insisted that his last researches were of the greatest interest, because they proved that the microbe was the cause of cancer, and stated that he wished to read a paper on the results he had obtained by inoculating animals. The Academy, however, refused a second time.

* * * *

It is remarked that even in countries where alcoholism is denounced, the mortality from it, as given by statistics, is low, apparently because the cause of death is not exactly declared. Professor Mahaim, of the University of Lausanne, drew attention to the matter in the Congress of Brussels, and proposed a method of certifying the cause of death which would give exact statistics, while respecting private feelings.

In Switzerland it is already done by certificates bearing numbers, and to identify the person corresponding to the number requires a long search. The plan has been in use in the towns for fifteen years and in the country for two years, and given satisfaction. It appears that ½ per cent. of the deaths (male subjects over twenty years) are caused by delirium tremens. Alcoholism alone, acute or chronic, is the cause of 4 per cent. of the deaths.

* * * *

The magnet has recently been put to a fresh use, and this time in the cause of surgery. An immense magnet has of late been added to the Bridgenorth Hospital, which will instantaneously attract bits of iron or steel that may have their way into the tissues. To show its power it is only necessary to remark that in one case it extracted a piece of a hammer-head from the muscles of the upper arm. At first the iron was given a chance to work itself out, but, as suppuration intervened, the magnet was called into requisition. In drawing tiny metallic particles from very delicate parts of the body, such as the eye, the magnet is invaluable, and it will probably be found of much service in military and field hospitals.

* * * *

The following prescriptions are taken from "English Medicine in the Anglo-Saxon Times," the title of the Fitz-Patrick Lectures of 1903, and now published in book-form by Henry Frowde. Some of the remedies described do not strike one as likely to be very efficacious, though, as they are "for external application only," they do not appear so nauseous as some of the decoctions which the unfortunate old-time patient was not infrequently made to swallow. Here, for instance, is a remedy for swollen eyes:—"Take a live crab, put his eyes out and put him alive again into the water, and put the eyes upon the neck of the man that hath need. He will soon be well."

For broken bones the following is recommended:—"Delve up waybroad (what, by the way, is way-broad ?) without iron, ere the rising of the sun; bind the root about the head with crossworts by a red fillet. He will soon be well."

For the same:—"Seek in the maw of young swallows for some little stones, and mind that they touch neither earth, nor water, nor other stones; look out three of them; sew up three of them in what thou wilt and put them on the man that hath need: he will soon be well. They are good for head-ache and eye-troubles, and for temptations of the fiend, and for night visitors (goblins), and for spring disease (ague), and for nightmare, and for fascination, and for evil incantations. They must be big nestlings in which thou shalt find them."

For a fever:—"Take the right foot of a dead black hound; hang it on the arm. It shaketh off the fever."

CORRESPONDENCE.

LEAGUE OF THE EMPIRE.

Caxton Hall,
Victoria Street, Westminster, S. W.
28th April 1905.

SIR,

I HAVE pleasure in informing you of some Empire Day Challenge Cups and Prizes open to all Secondary and Primary Schools of the Empire. The conditions are in the extract from the *Record* appended.

Would it be asking too much of you to notify in your *Education Gazette* that the Schools must judge these prizes first, sending in one essay only for competition with other Schools. Do you think that any prominent Bombay Educationalists would arrange for the further judging of these essays, so that two only shall be sent in for the final competition with other countries. We have obtained this help in certain other Provinces in India as you will see in our *Record*, and it is a very great help to us to have this definite assistance on the spot.

I am,
Faithfully Yours,
E. M. ORD MARSHALL,
Honorary Secretary,
League of the Empire.

Extract from the *Monthly Record of the League of the Empire,* April 15th :—

"We have received a proposal from the South Australian Branch of the League for an interchange of Empire Day Essays between Schools there and Schools in other parts of the Empire. As time scarcely admitted of an answer to their proposal before 24th of May, they have themselves suggested the following subject for this year's essay :—'Empire Day, its foundation, purpose and modes of celebration.'

We have pleasure in announcing that in furtherance of the scheme, Lord Meath has presented the Society with two silver challenge cups, value £10 10s. each, which will be open to be competed for each Empire Day by Secondary and Primary Schools throughout the Empire. In conjunction with the Cups the League offers personal prizes of £5 5s. and £3 3s. The following conditions are attached :—

(A.) LORD MEATH EMPIRE DAY PRIZE (Secondary Schools).—A Silver Challenge Cup, value £10 10s., presented by the Right Hon. the Earl of Meath, K.P., to be held by the School, and a personal prize of £5 5s., given by the League of the Empire, is offered for competition to all Secondary Schools throughout the Empire for an Empire Day Essay of not more than 2,000 words. The subject, which shall deal with a matter of Imperial import, to be announced not less than six months previous to the 24th of May.

(B.) LORD MEATH EMPIRE DAY PRIZE (Primary Schools).—A Silver Challenge Cup, value £10 10s., presented by the Right Hon. the Earl of Meath, K.P., and a personal prize of £3 3s., given by the League of the Empire, is offered for competition to all Primary schools throughout the Empire for an Empire Day Essay of not more than 1,000 words. The subject, which shall deal with some matter of Imperial history, geography, agricultural or industrial condition, to be announced not less than six months previous to the 24th of May.

All Essays must first be judged in the schools, and afterwards through representatives of the League in the different countries. Those selected for final competition by judges appointed by the Federal Council in London. The special subject for this year is, by request, 'Empire Day, its foundation, purpose and modes of celebration.'"

(We presume that by "the special subject for this year" is intended the year beginning May 24th, 1905, and ending May 24th, 1906. Empire Day is May 24th.—*Editor* .)

REVIEWS OF BOOKS.

ELEMENTARY PRACTICAL PHYSIOLOGY.

By John Thornton, M.A., Headmaster of the Municipal Secondary School, Bolton. 324 *pages, Crown 8vo, with* 178 *illustrations.*

(PUBLISHED BY LONGMANS, GREEN & Co. *Price,* 3*s.* 6*d.*)

THOUGH this text book can claim little originality in substance, yet it gives an extremely clear account of the main elements of physiology. Among its special features, the following may be noted :—A useful glossary, giving the correct pronunciation and derivation of commonly used physiological terms, and table of numerical data concerning the human body, and a series of questions which serve to indicate the most important points in each chapter. The book is designed for the instruction of the higher classes in schools, and is well adapted to the purpose.

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ATLAS OF THE WORLD'S CHIEF INDUSTRIES.

(GEORGE PHILIP & SON. 2*s.*)

THESE Charts were prepared by the Editor of *Commercial Intelligence* and supply, in maps on Mercator's projection and various diagrammatic forms the chief facts and statistics connected with the wheat, sugar, tea, coal, cotton, and seven other industries. The chart on cotton illustrates the fluctuations in prices of imported cotton, the sources of raw cotton-supply, the amount of cotton supplied each year by the various countries, the world's consumption of cotton, the number of cotton spindles in the world, and the value of British imports of raw cotton. Each Chart is accompanied by explanatory letter-press. The statistics are of the latest date. The atlas should be of great assistance in the study of commercial geography.

LUCIAN: CHARON AND PISCATOR. *Edited by T. R. Mills.*

(UNIVERSITY TUTORIAL PRESS. 3*s.* 6*d.*)

A SCHOOL text-book with introduction, text, notes, and index of proper names. The introduction is a sound piece of explanation, the notes are elementary and informing to beginners.

FLORILEGIUM TIRONIS. *By R. M. Burrows and W. C. Flamstead Walters.* (MACMILLAN & CO. 4*s.* 6*d.*)

THIS book of simple passages for Greek unseen translation is formed on a novel plan. It is intended to supply the average boy or pass man with some idea of the beauty and greatness of Greek Literature and of the work, as a whole, of the chief Greek writers. For this purpose such characteristic passages are selected as will illustrate a simple course of literary lectures on the author, and in the case of Homer and some dramatists the extracts illustrate the plot of the whole epic or play. The authors, too, are arranged in historical order. The plan sounds specious, but it seems to us that the student will not get enough variety in his translation. The extracts from Homer alone are almost a term's work. On the other hand, the book might be used in place of annotated editions of prescribed authors, and then the student would have variety in his prepared translation in place of being confined to a single book. The bold step of altering the language for the purpose of simplification is, we think, justifiable.

HOW TO USE PLASTICINE. (*Written and Published by W. Harbutt.* 6*d.*)

THIS little pamphlet gives general directions on the method of modelling with Plasticine, and a number of illustrations from specimens of modelling by beginners. The illustrations are clear, the directions lucid. Plasticine seems to be a very suitable material for instructing children in modelling and providing them with a harmless amusement.

SELECTED POEMS OF GRAY, BURNS, COWPER, MOORE, LONGFELLOW. *Edited by H. B. Cotterill.*

(MACMILLAN & CO. 1*s.*)

THE poems are not Mr. Cotterill's selection, but those appointed by the Intermediate Education Board for Ireland for examination, and, though all well known, are not representative of their authors. Mr. Cotterill has made his introduction rather longer than is absolutely necessary, perhaps to make up for the weakness of the selection, and if we may judge of the calibre of the examinees by the character of the poems, some of his critical remarks will be above their understanding. The notes are full, especially those on the circumstances in which the poems were written, and will supply a large amount of information interesting and profitable to the student.

SCOTT'S ROKEBY. *Edited by W. A. Hirst.* (THE EDUCATIONAL PUBLISHING CO., BOMBAY.)

INTENDED for Indian students this edition contains a very full Introduction and Notes, but Mr. Hirst directs his readers wisely in the use of the matter he supplies. The Introduction deals with the usual topics in a sensible way, the best part being the section on Scott as a poet of Nature. Mr. Hirst might, however, have supplied the student with a clear and simple explanation of what is meant by Romance and the Romantic Movement. In the Notes the quotation of parallel passages is, in our opinion, carried to excess, and there are some Notes which seem unnecessary, *e.g.*, that on the reputation of Shakespeare (pp. 199 and 217). Scott's Arawaca is probably not the river in Chili, but the tributary of the Orinoco (p. 260). Though here and in a few other places we do not quite agree with Mr. Hirst's explanations, we can heartily recommend his edition to students of Scott.

ESSAYS FOR INDIAN STUDENTS. *By J. A. Balfour, and another Writer.* (THE EDUCATIONAL PUBLISHING CO., BOMBAY.)

THIS book of over 300 pages, intended for schoolboys and junio college students, contains 48 pages of hints on composition, skeleton outlines of essays on over one hundred subjects, complete essays on the same subjects, and examples of letters, written by classical authors or such as boys and students write to each other. The "Hints," which are largely borrowed from Dr. Blair and other sources, are practical and clear within their limits. The method of teaching is, on the whole, good, but we do not believe in learning by heart versified rules, and it seems to us that the author does too much for the student. Youthful essayists require to have matter suggested to them and a few complete essays to serve as models. But Mr. Balfour's hundred essays will, like the many other similar books already in existence, furnish material for copying rather than thinking. The subjects, however, cover a wide range, and the book will be of great use to the teacher who has not time or energy to think out his points for himself. The epistolary section is the weakest. The letters from or to students are rather priggish, and contain some examples of the very faults against which students have to be cautioned, *e g.*, p. 297, "endeavour to follow *the same*"; p. 293, "*nice* things to see"; p. 309, "your letter *came to hand*." The list of *Corrigenda* is exceptionally lengthy.

FRENCH BOOKS.

(1) ANECDOTES ET RÉCITS. *By W. G. Hartog, B.A. London.* (RIVINGTONS. 2*s.* 6*d.*)

(2) EMILE ET HÉLÈNE. *By Mrs. J. G. Fraser.* (MACMILLAN & Co. 1*s.*)

(3) LA FÉE GRIGNOTTE. *By Madame de Girardin.* (E. ARNOLD. 9*d.*)

(4) FRENCH UNSEENS. *Edited by the Rev. Longland.* JUNIOR, PARTS I AND II. SENIOR, PARTS I AND II. (RIVINGTONS.)

MR. HARTOG'S book is a reader for elementary and middle forms. The *Table des matières* is full and copious, the stories are judiciously chosen, and every attempt is made to combine instruction with amusement. The chief merit of the book consists in the oral and written exercises, and the passages for re-translation are likely to induce the juvenile readers to be original. The examination questions are put in a simple and direct form, which appeals to the ingenuity of the learner, and the method suggested by the author will be accepted by the judgment of teachers. There are some striking illustrations.

Mrs. Fraser's little book of exercises is easy and enlivening, putting before the mental vision of juvenile readers things which they every day see and speak of.

"La Fée Grignotte" and "La Cuisine au Salon" seem to expect more knowledge of the French language from the learners than Mrs. Fraser's Emile et Hélène. The language is distinctly more difficult, and the student has to deal with idioms and the minor intricacies of the language. The grammatical portion of the book is clear and well arranged, and the list of sentences given at the end will assist the reader to test and revise his knowledge.

To initiate beginners of the French language into the power and charm of a foreign tongue, the Rev. Mr. Longland has graded his selections according to the degree of ingenuity and comprehension required by the reader, and divided them into two Junior and two Senior Courses. The extracts are interesting and varied in style and matter. They will give the student some idea of the masters of the language, especially in modern times. The little verses appended at the end of the Senior Course will serve as an introduction to the more difficult study of French poetry.

BOOKS RECEIVED.

The Handy Atlas of the British Empire. By J. G. Bartholomew. (*G. Newnes. 1s. net.*)
What Do We Know Concerning Electricity. By Antonia Zimmern. (*Methuen. 1s. 6d. net.*)
The Life of Christ in the Words of the Gospels. By Canon J. J. Scott. (*Murray 7s. 6d.*)
Music in Speech, Drama in Song. Lectures by Albert E. Drinkwater. (*The Board of Trinity College of Music, London. 6d.*)
Handbook of the Art of Teaching as Applied to Music. By John Warriner. (*The Board of Trinity College, London. 2s. 6d.*)
Technological and Scientific Dictionary. Edited by G. F. Goodchild. Part VIII. (*George Newnes. 1s. net.*)
Harmsworth's Encyclopædia. Edited by George Sandeman. Parts I., II., III. (*The Amalgamated Press, Ld., and Thomas Nelson and Sons. 7d. each.*)
La Fille de Roland. A Drâma by H. de Bornier. Edited by Merwanji R. Parakh. (*Ramchandra Govind & Son, Bombay. Rs. 2-8.*)
Object Lessons in Elementary Science. Stage V. By Vincent T. Murché. (*Macmillan & Co. 2s.*)
Philip's Semi-Upright Copy Books. French Series. Nos. 10 B, C, D. (*2d. each.*)
Technics. March. (*George Newnes. 9d. net.*)

OUR CONTEMPORARIES.

MR. MAGNUS concludes his study of Tennyson's poems in *The School World*. In answer to the question why Tennyson spent so much labour on the description of an ideal of honour and chastity which broke down, he says that the purpose of the Idylls was "to show that no scheme of human government, however perfect in conception, can bind the will of man . . . . Oaths may be imposed with every ceremony which antiquity and tradition suggest, but the true sanction of conduct lies with each man himself." The fall of Arthur and his chivalry was not merely the punishment of Guinevere's sin or the result of a certain weakness in Arthur's own character, but the inevitable end of attempting to create morality by forced and artificial restraints. This leads to the consideration of Tennyson's teaching on Free-will and Law. Though in the Idylls Tennyson depicts the failure of a system of asceticism, yet self-reverence and self-control are essential principles of his teaching. But they must be accompanied by a sense of responsibility and a consciousness and deliberate pursuit of moral right. The lesson of *Œnone* is that we are to live by law.

Acting the law we live by without fear;
And, because right is right, to follow right
Were wisdom in the scorn of consequence.

Thus Tennyson for all his sense of the reverence due to law vindicates, in the spirit of the nineteenth century, the real independence of the individual. Mr. Magnus's outline of Tennyson's teaching, brief though it is, is an excellent illustration of the way in which poetry can be made to serve as a text for lessons in morality, religion, and art, suitable alike for young and old.

* * * * *

In an article in *School* on "Method in Mathematical Teaching" Mr. Lattimer argues that algebra is only generalised arithemetic, and therefore algebra may be early begun by the introduction of algebraical symbols into arithmetic. "What is required is not mechanical skill in manipulating algebraical expressions, but a thorough knowledge of that part of the subject which will be of practical use to him in solving arithmetical or geometrical problems." Equations and graphical methods should be introduced as soon as possible. Long multiplications and divisions, brackets, complex H. C. F. and L. C. M. questions, etc., might be left till later. The exact meaning of symbols, like brackets and =, must be understood, or they will be wrongly used, and written explanations should be frequently demanded in place of them. In equations it is essential that the pupil should recognise the axioms on which the working process is based and explain them in his working. The "take it to the other side and change the sign" method is futile. Graphs, he rightly thinks, are being overdone. In factors the pupil must be trained to recognise types and to explain his method of arriving at them. The method by trial is fluky. In these and other respects Mr. Lattimer insists on the use of the reasoning power in algebra, where, owing to the use of symbols, work is apt to degenerate into mere juggling with signs.

Writing in the same magazine on "Some Books on Moral Instruction," Mr. Pressland quotes a description of Mr. Macnaghten's work at the Rajkumar College, Rajkote. "In spite of all adverse circumstances Mr. Macnaghten taught the lessons of solidarity, public spirit, and *noblesse oblige* to his pupils . . . . Mr. Macnaghten's teaching was informal and often indirect. He laid stress on the moral value of good work . . . . He taught his pupils that the enjoyment of life was a legitimate interest, that games were good for the mind as well as for the body. He looked to them as a formidable weapon against cruelty and cheating, but he was aware that athletic prowess was not synonymous with character." After a description of several works on the teaching of morality, the writer continues: "The work of Professor Förster and Mr. Macnaghten proves that moral instruction is not an impossibility. Their writings show that it is not a form of religious eccentricity, but a result of large-minded religious benevolence—a benevolence which recognises the value of outside interests and the necessity for pleasure. The use of a text-book for pupils is open to doubt. Too often the teaching degenerates into textual criticism, and the pupil becomes torpidly acquiescent. Indirect methods of teaching seem to be most effective, and the personality of the teacher counts for more than his didactic skill. It is one thing to preach self-discipline, voluntary obedience, and self-government, and another thing to apply these virtues to practice."

* * * * *

In the April number of *East and West* the place of honour is occupied by an article by Dr. Keane on "Indian Race and Speech." Dr. Keane sets himself to refute the theory of Mr. R. P. Chanda, that in India there are no race distinctions, that all the Indian peoples are of one stock, and the theory of Mr. Risley that there is no radical distinction between the Dravidian and Munda or Kolarian groups of languages. Dr. Keane's conclusions are that the superficial uniformity of physical characters is far less than is commonly supposed, and is due not to primordial unity, but to the intermingling of distinct ethical groups; that the racial unity claimed by early Hindu writings is opposed to actual facts, and that their theories were framed especially in the interest of the Brahmanical caste. He believes there were four primary stocks—a submerged *Negrito*, probably from Malaysia, and a Kolarian, Dravidian, and Aryan, who arrived in the order named from beyond the Himalayas. Lastly he argues that the Kolarian languages are radically distinct from the Dravidian.

Next in interest to Dr. Keane's article is Mr. Anderson's review of a series of essays written by thirteen young Frenchmen, professors of the University of Paris, who travelled round the world in compliance with the terms of certain scholarships founded by Mr. Albert Kahn. The object of the scholarships was to enable the future teachers of France to gain an exact idea of the position of France in the world and of "the conditions of life in different countries, the manner in which each Government attempts to form the public intelligence, the means adopted to develop the genius of each nation, and, finally, the causes which, in whatever department of life, have secured to any people such superiority as it may possess over other nations." M. Bourgoyne, who writes of Burma, acknowledges that "British rule has increased the economic riches of the country and the welfare of its inhabitants, without, apparently, adding sensibly to their burdens," and has secured an order, security and justice unknown before. But he thinks that the police are corrupt and that far too little is done to develop national culture, and especially technical education. "The English have not this sort of initiative: they seem to have done almost nothing that is simply and solely for the benefit of the Burmans." India was visited by M. Pirion, who does not seem to have penetrated very deeply into the real nature of the country and its peoples. He does not seem to realise, says Mr. Anderson, the variety of its population or the complexity of its problems of Government, and believed that he saw signs of the birth of a new Asiatic patriotism. The conclusion which Mr. Anderson arrives at, after a perusal of this French survey of all mankind, is that the British colonies enjoy an unprecedented freedom, which is shared largely even by India, and that the first requisite of the latter country is a large tolerance and mutual comprehension in accord with the freedom which it enjoys.

GOVERNMENT NOTIFICATIONS.

PERMANENT NOTIFICATION.

NO. 3197 OF 1902-03.

POONA: OFFICE OF THE
DIRECTOR OF PUBLIC INSTRUCTION,
6th March 1902.

INDIAN EDUCATION.

The Educational Department is not responsible for anything which may appear in this publication, unless over official signature.

F. G. SELBY,
Acting Director of Public Instruction.

NOTIFICATION.

Raymont's "Principles of Education" is recommended as a book suitable for teachers and school libraries. Price 4*s*.6*d*., published by Longmans, Green & Co., Bombay.

Poona: Office of the
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11th May 1905.

E. GILES,
Director of Public Instruction.

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R. D. PRIOR,
Educational Inspector, C. D.

Poona, 27th April 1905.

List of appointments, etc., in the Educational Department, from 11th March to the 10th April 1905.

APPOINTMENTS MADE BY GOVERNMENT.

10th April 1905—Major W. V. Scudamore, R.E., Principal, College of Science, Poona, is granted furlough from 15th April to 18th September 1905, in combination with the College vacation.

14th April 1905—Shaikh Jaffer Mahomed, B.A., Deputy Educational Inspector, Sholapur, is granted two months' privilege leave from the 1st April 1905, or the subsequent date on which he may avail himself of it.

Mr. Govind Bahirao Brahme, B.A., is appointed to act as Deputy Educational Inspector, Sholapur, during the absence on leave of Shaikh Jaffer Mahomed, B. A.

26th April 1905 -Mr. F. B. Pendarves Lory, M.A. (Oxon), Acting Educational Inspector, Northern Division, is granted three months' privilege leave from the date on which he is relieved.

Mr. Gopal Balkrishna Rishi, L.C. E., is appointed to act as Lecturer in Engineering, College of Science, Poona, *vice* Mr. Bomanji Hormasji Pavri, L.C.E., or until further orders.

1st May 1905—Mr. K. D. Naegamwala, M.A., F.R.A.S., Director, Maharaja Takhtasingji Observatory, Poona, is granted one month's privilege leave from 1st May 1905, or the subsequent date on which he may avail himself of it.

Mr. D. D. Kapadia, M.A., B.Sc., is appointed to hold charge of the office of Director, Maharaja Takhtasingji Observatory, Poona, in addition to his own, during the absence on privilege leave of Mr. K. D. Naegamwala, M.A., F.R.A.S., or pending further orders.

APPOINTMENTS MADE BY THE DIRECTOR OF PUBLIC INSTRUCTION.

14th April 1905.—Mr. J. A. Sayed, B. A., S. T. C., Probationary 8th Assistant, Nariad High School, is confirmed in his appointment.

17th April 1905.—Mr. V. M. Nagori, sub *pro tem* 2nd clerk, Deputy Educational Inspector, Surat, to be 2nd clerk, Deputy Educational Inspector, Panch Mahals, but to continue sub *pro tem* 2nd Clerk at Surat, till further orders.

Mr. R. J. Gokhale, B. A., Probationary 15th Assistant, Nasik High School, to be Probationary 14th Assistant in the same school, *vice* Mr. G. G. Sane transferred to the Garud High School, Dhulia.

Mr. M. K. Karkhanis, B. A., sub-*pro tem.* 7th Assistant, Female Training College, Poona, to be Probationary 15th Assistant, Nasik High School, on Rs. 35.

Mr. K. L. Ogle, B. A., sub *pro tem* 7th Assistant, B. J. High School, Thana, to be Probationary 7th Assistant, in the same School, *vice* Mr. N. M. Joshi, appointed Probationary 17th Assistant, Elphinstone High School.

The following appointments are made in the Garud High School, Dhulia :—

17th April 1905.— Mr. V. S. Ghate, M. A., Acting Professor of Sanskrit, Elphinstone College, to be Probationary 3rd Assistant, Garud High School, Dhulia, on Rs. 70, *vice* Mr. M. K. Joshi, transferred to the Training School, Dhulia.

Mr. N. K. Bhave, B. A., Probationary 7th Assistant, Garud High School, Dhulia, to be Probationary 6th Assistant, in the same School, *vice* Mr. M. C. Shaligram transferred to the Satara High School.

Mr. G. V. Belsare, 8th Assistant, to be 7th Assistant.

Mr. K. B. Joshi, 9th Assistant, to be 8th Assistant.

Mr. D. V. Attavle, 10th Assistant, to be 9th Assistant.

Mr. S. V. Sathe, 11th Assistant (Drawing Master), to be 10th Assistant (Drawing Master).

Mr. K. B. Gokhale (Intermediate), S. T. C., 12th Assistant, to be 11th Assistant. Mr. Gokhale is on leave.

Mr. G. G. Sane, B. A., Probationary 14th Assistant, Nasik High School, to be Probationary 12th Assistant, Garud High School, Dhulia, and sub *pro tem* 11th Assistant, Garud High School, Dhulia, till further orders.

Mr. N. A. Oke, B. A., S. T. C., Probationary 6th Assistant, is confirmed in his appointment.

Mr. S. Fernandiz, B. A., 1st Assistant, Karwar High School, to be Assistant Deputy Educational Inspector, Karwar, *vice* Mr. D. N. Koppikar, retiring from 4th May 1905.

Mr. R. D. Nadkarni, B. A., 2nd Assistant, Training College, Dharwar, and sub *pro tem* 2nd Assistant, Dharwar High School, to be 1st Assistant, Karwar High School.

28th April 1905.—Mr. V. R. Sohoni, 12th Assistant, B. J. High School, Thana, to be 14th Assistant, Sholapur High School.

Mr. M. N. Sabnis (Intermediate), S. T. C., 14th and sub *pro tem* 13th Assistant, Sholapur High School, to be 12th Assistant, B. J. High School, Thana, but to continue sub *pro tem*, 13th Assistant in the Sholapur High School, until further orders.

Mr. V. V. Patwardhan, B. A., 1st Assistant, Sholapur High School, and Acting 1st Assistant, Poona High School, to be 2nd Assistant, Poona High School, but to continue Acting 1st Assistant, Poona High School, till further orders.

3rd May 1905.—Mr. G. S. Dikshit, M. A. (S. T. C.), Probationary 3rd Assistants, B. J. High School, Thana, is confirmed in his appointment.

J. G. COVERNTON,
Assistant Director of Public Instruction.

Poona: Office of the
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3. See notice in *Indian Education* for August 1902, page 55.

R. D. PRIOR,
Educational Inspector, C. D.

Poona, 9th May 1905.

Author.	Title of Work.	Publisher.	Price.
	CLASS 10 A:—*Catalogues, &c.*		£ s. d.
	The Book-Seller for April 1905	J. Whitaker.	0 0 6
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K. Deighton ...	Shakespeare's Two Gentlemen of Verona... ...	Macmillan ...	......

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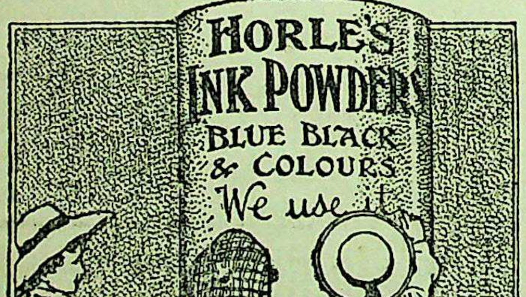

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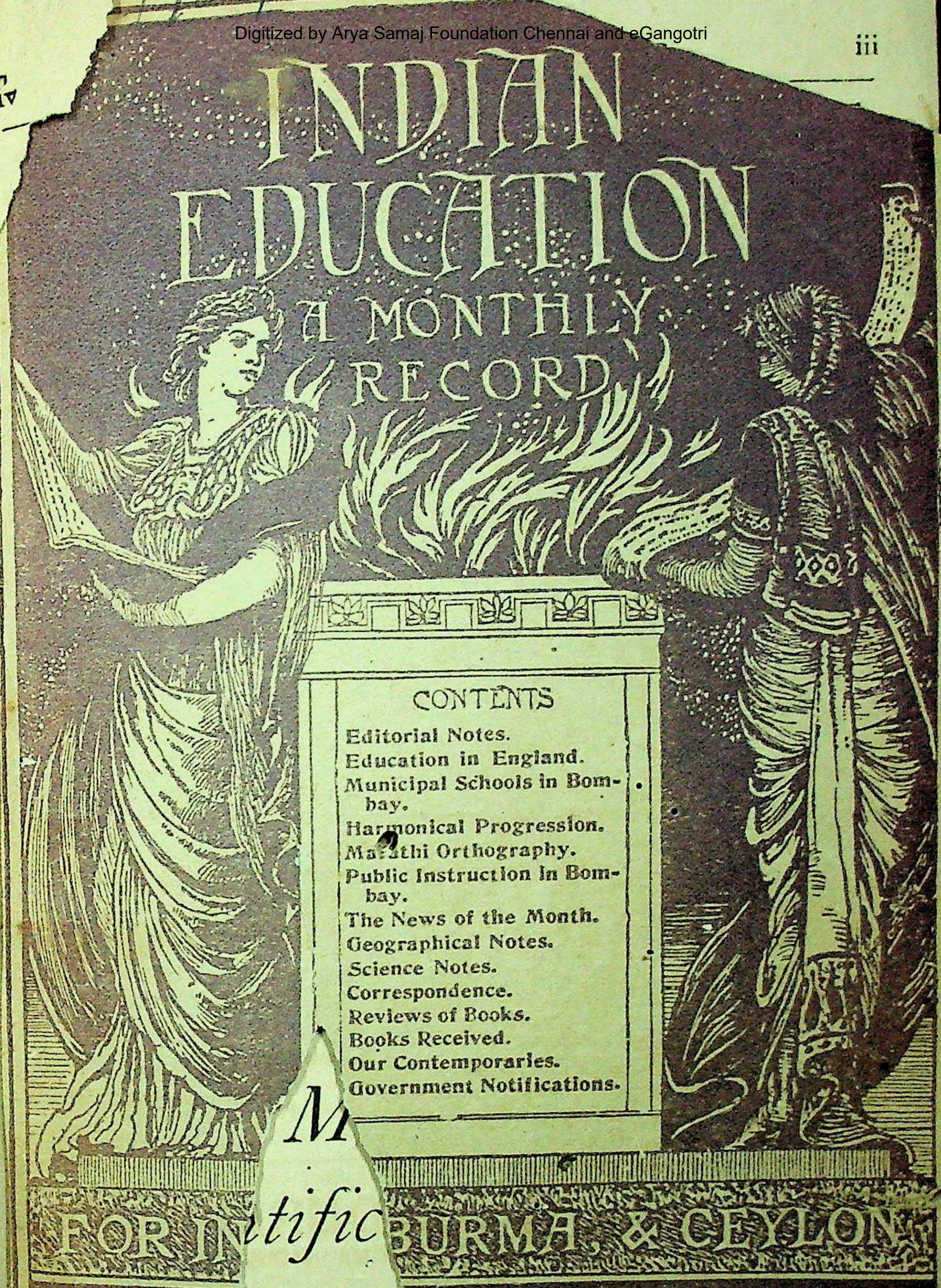

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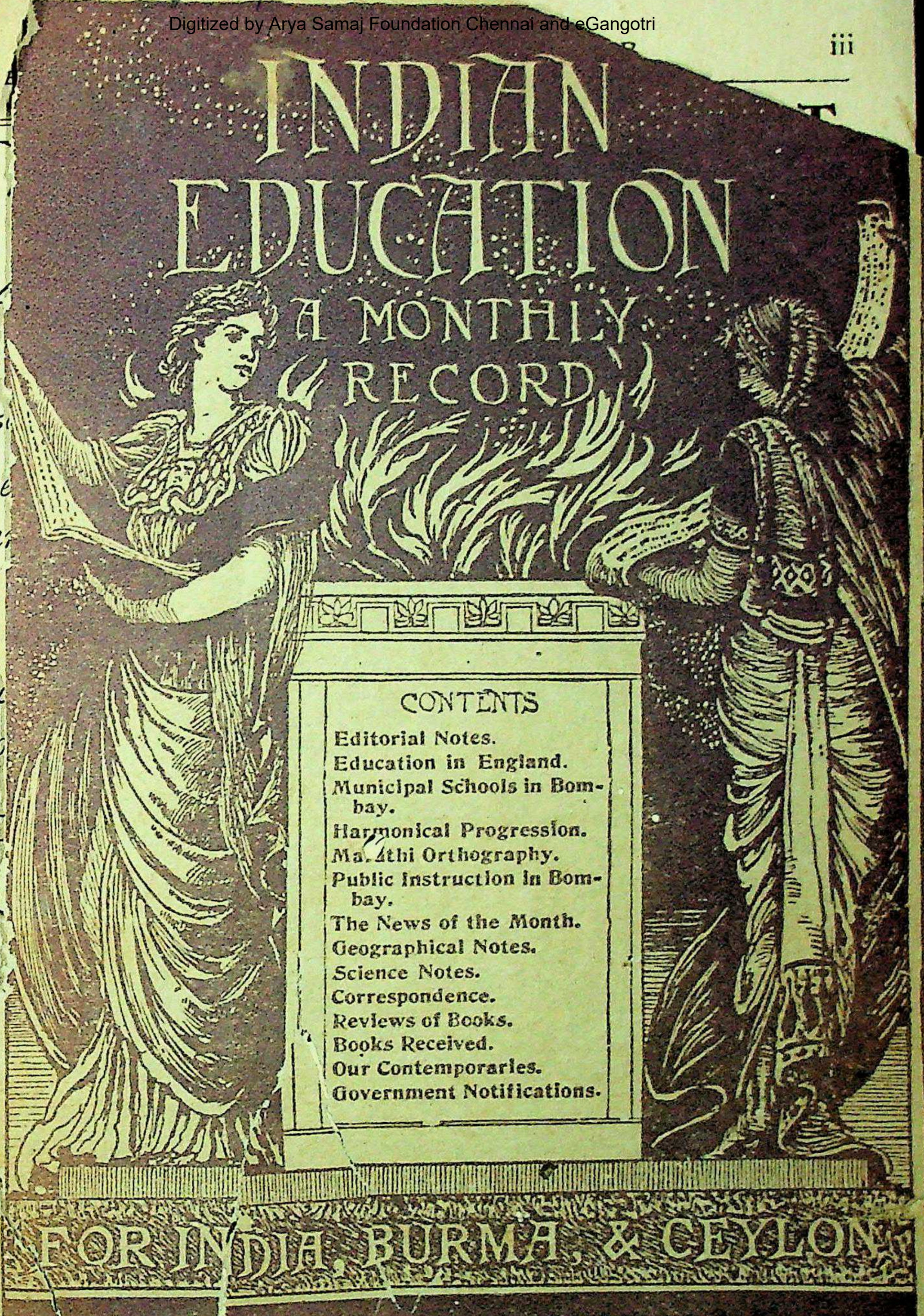

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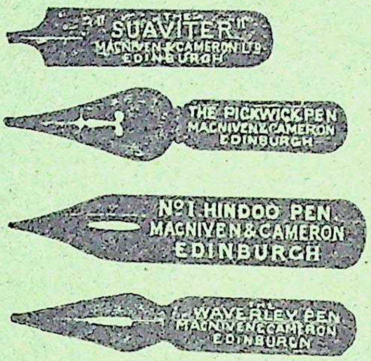
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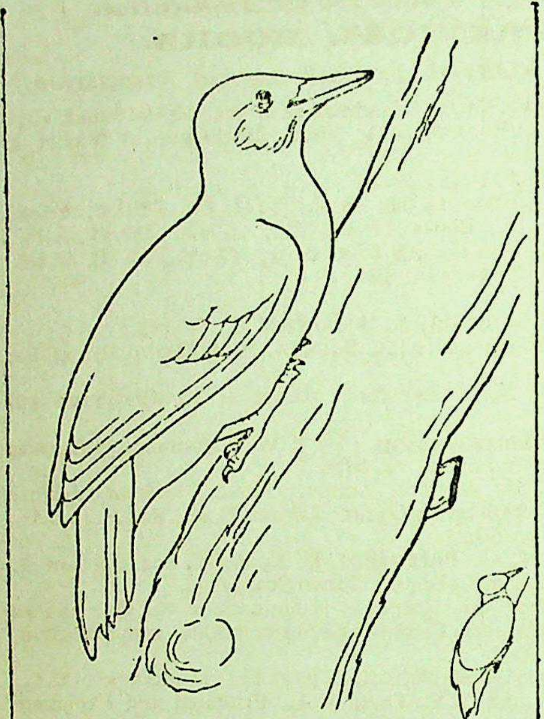

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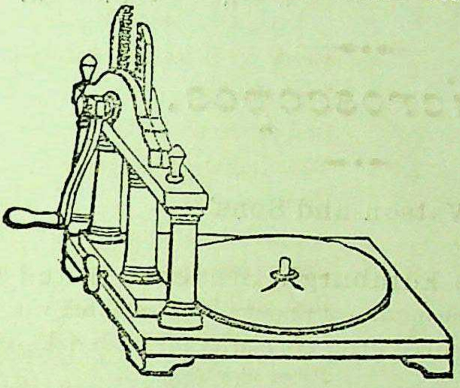

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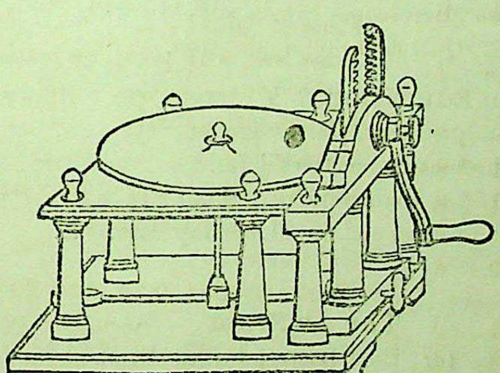

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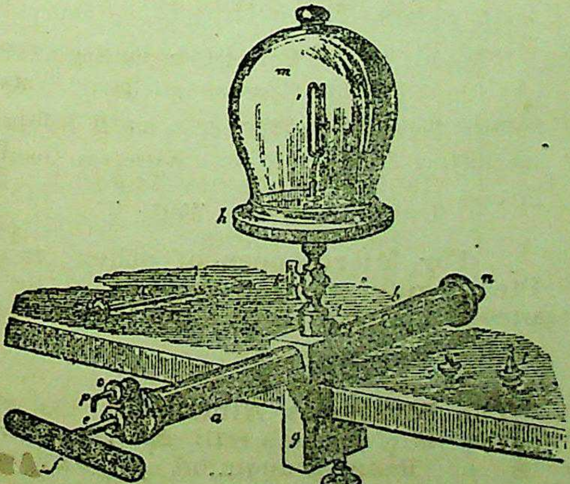

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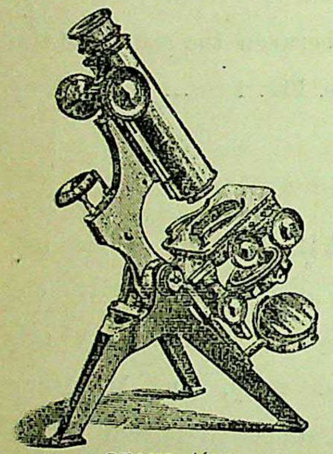

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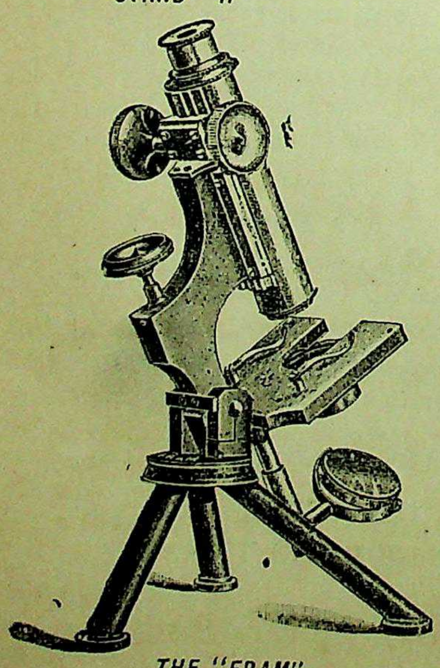

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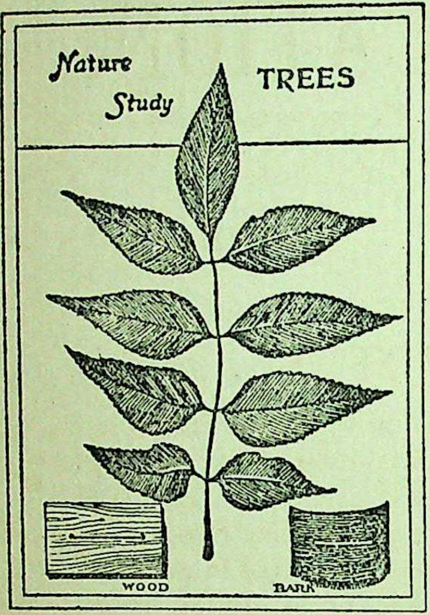
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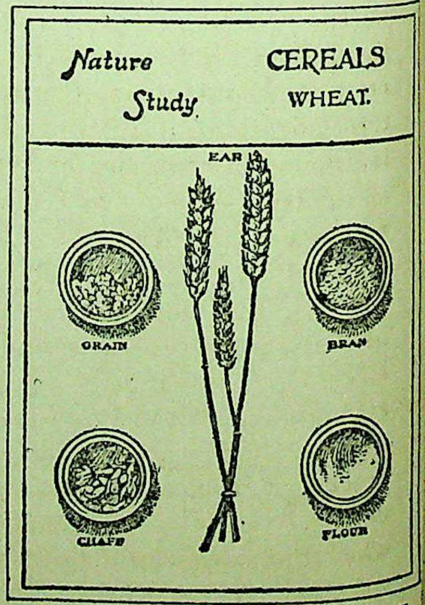
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INDIAN EDUCATION.

We,—we have chosen our path
Path to a clear-sighted end,
Path of advance!

VOL. III.] MARCH, 1905. [No. 8.

EDITORIAL NOTES.

THE Universities Validation Bill has now passed into law, and declares that the Provisional Syndicates, as at present constituted, shall be deemed duly appointed under the Act. We sympathised with those who protested against the new Syndicates in so far that we thought the method of election followed in Bombay an unfortunate one. But with the method of expressing their grievance adopted by Mr. Gokhale and his friends we have no sympathy. The question of legality was, as we said, not one on which the layman could pronounce, though to a lay mind there was not much appearance of ground for the charge of illegality. To make such a doubtful legal case a reason for interrupting the working of the Act for many months (as Mr. Gokhale did not hesitate to say that he was prepared to do), to commence a course of lengthy litigation throughout India on the ground of ambiguities in the wording of the Act, is unworthy of those who profess themselves the friends of Education. Mr. Gokhale adopted all the methods of obstruction that he or his friends could devise to hinder the Validation Bill from passing, and charged the Government with legislating in contempt of law, and with using its official position in an underhand way to reduce the native element to so small a minority as to dissociate it effectually from the control of the Universities, and to render Syndicates and Senates merely official bodies. The Viceroy in his speech pointed out that the ambiguities in the University Act were due mainly to one of Mr. Gokhale's own allies, and emphatically denied that he had anything to do with the appointment of the Provisional Syndicates save, in a purely official capacity, and in accordance with the Act, to indicate the method of procedure for election. As regards the proportion of Europeans and natives of India in the Senates there are only two Universities in which the European Fellows predominate, and in those the majority is, in Madras, only four, in Allahabad, only five. The composition of the Syndicates depended on that of the Senates. The real grounds for complaint in Bombay at least, were, as we have indicated, that the method of election adopted deprived some individuals of an office for which they were well fitted, and which they had previously well discharged, and that it tended to select as Syndics in Arts only professional teachers. But personal feeling should not be allowed to stand in the way of reform of education and the other ground was a small matter. It is to be hoped that nothing will now occur to prevent the reformed Universities from setting to work in earnest.

* * * *

Commercial and Industrial education is receiving a great deal of attention just now in Calcutta. The organisation of the new Department of Commerce and Industry has given a much needed stimulus to this branch, and now that the appointment of a Secretary to Government for the new Department, and of a Director-General of Commercial Intelligence has been announced, a rapid development may be expected. In "News of the Month" will be found an account of the arrangements for a course of commercial instruction at the Presidency College, Calcutta, and of the formation of an Association for providing scholarships to enable students to study the arts and industries of Japan, America, and Europe. If the reports of the discovery of extensive fields of iron, copper, and aluminium in the Central Provinces prove to be well founded, it may well be that India is on the eve of a great industrial and commercial advance which will revolutionise the country. The formation of the new Department is therefore very timely, and the development of commercial education should be one of the directions in which its attention should be first turned. Hitherto commercial education while claiming to be practical in its object has been very unpractical in its methods. A little book-keeping, type-writing, arithmetic, and "commercial geography" are about all that it has implied, and in spite of it there is an ever-growing complaint of the difficulty of obtaining good clerks. We fear that the merchant has little belief in commercial education as at present conducted. The adoption, therefore, of the proposal that local examinations shall be held in Calcutta in place of those of the London Chamber of Commerce, and that the examination board shall be constituted not merely of educational officers, but also of members of the Bengal Chambers of Commerce has a very business-like appearance. Only those who are actually engaged in commerce in India can have a real knowledge of its requirements, and a certificate of passed examinations conducted by them will be a real guarantee that its holder is specially fitted for mercantile employment. It is to be hoped that some similar arrangement may be made in Bombay. The Senior Certificate Examination of the London Chamber of Commerce is growing in popularity in this Presidency, but the majority of candidates appear to devote themselves merely to book-keeping. In the last report of the Director of Public Instruction mention is made of the inconvenience caused by the late arrival of the papers from the London Chamber, and this is one instance of the difficulties involved in an examination by this body. The Director, however, holds out hopes that in a year or two a more simple course of commercial instruction may be established in connection with the School Final Examination, "with special reference to the needs of Indian houses of business and native students." The hopes are rather vague, and we trust that Bombay will not be long behind Calcutta in adapting itself to the special wants of Indian Commerce.

* * * *

The article on "Higher Education in India," which the Bishop of Madras has written in the January number of the *Nineteenth Century*, is a very pessimistic one. The writer picks out what appear to him three great defects in Indian education, two of which he finds irremediable, while the only remedy he approves for the third, has been refused. Our system has, he says, in the first place divorced education from religion. "In ancient India religion supplied the whole motive of the higher education of the Brahmans, and dominated the whole system." The teacher taught because it was a religious duty, the learner learnt to obtain salvation. Modern education is purely utilitarian, there is no devotion to learning for the sake of either its intellectual or its moral effects, and he holds that education can never make real progress till it becomes once more religious and moral. "The future of India depends not so much upon the statesman or educationist as upon the missionary." Now the Bishop does not of course mean by the latter merely the Christian missionary, but the preacher of any religious gospel, and he fully recognises the inevitability of the divorce of education and religion under British rule. He argues that separation has been, and was bound to be fatal to education, and has deprived it of its power of moulding the Indian people—at any rate for good. This argument seems to rest on the assumption that the divorce of the two involves the destruction of religion, or of religious teaching. But is it not possible that the two should exist side by side though separate? In England this is virtually the state of the case, for the religious teaching actually received in most schools is very perfunctory. Both India and England are, we believe, in a state of transition in this respect. In both, the absolute sway which religion once exercised over education has been thrown off, because it retarded thought. But we believe a reconciliation will be ultimately effected in England, and in India we look forward to the new generation who have grown up under the secular instruction of modern times applying their new ideas to their ancient religion. The division of labour extends further than we think, and the missionary has become separated from the educationist, because the combination of their functions no longer produced results that satisfied the world. Granting that the division has produced some confusion and antagonism, we regard that as temporary, and we look forward to seeing the two duly correlated. The future of India rests not on the missionary more than the other two, but on the proper inter-relation of their respective functions.

The second defect is the prevalence of cramming, which the Bishop attributes to the necessity of studying in a foreign language. This is to him another ineradicable fault. We believe, however, that the evil of cramming has other causes besides this, for instance, wrong methods of teaching, and that some of these at least can be removed. Lastly, he says, a third difficulty arises from the number of students. Actually they are not very numerous, relatively to the number and capacity of their teachers and still more to their own capacity their number is too great to be manageable. Undoubtedly they begin their College career too young. We know instances of boys entering College at the age of thirteen, and therefore studying the philosophy of Kant or higher mathematics at seventeen. But surely the remedy for this is rather to raise the standard of age and of the entrance examination. To institute a separate honours course, it is true, would give the best students a better chance but it would leave "the ruck" not merely where they were, but worse off—without any stimulus to raise themselves to the level of their better companions.

EDUCATION IN ENGLAND.

THE Christmas holidays in England have been fuller than ever of educational conferences. Nearly every section of the teaching profession holds its own independent gathering; partly for social reasons in order that fellow-workers may meet one another, partly in order to discuss the general questions which are coming up for settlement in the present reorganisation of our educational arrangements. I will endeavour, in this letter, to group together the points upon which discussion has been general, and to indicate some of the conclusions which seem likely to be reached.

The most noticeable point of all is the breaking down of many of the barriers which have hitherto divided the educational life of England into separate compartments. The distinction between the denominational and the undenominational elementary school is in many respects much less marked than was the case four years ago. All the public elementary schools of each district have been brought under the supervision of one local authority. The local secondary schools have now to consider the relation of their courses of study to those in the elementary schools. This change has come about partly through pressure of public opinion, partly through the working of scholarship systems, partly through the influence of the new regulations which postpone the age of pupil teachership till sixteen, and require those who intend to devote themselves to the teaching profession to receive a more liberal education up to that time. The universities, old and new, are busy with discussions as to what should be their requirements for matriculation, that is to say, they are considering what may be called the *frontier* question between university and secondary education. In modern times England has had no national system of education. It has had a great deal of education, much of it excellent, but it has had no unity of educational organisation. An attempt is now being made to construct out of these sectional activities a single whole. It is still by no means certain that the attempt will succeed. In the meantime discussion is slowly working its way down to the fundamental things. First of all, what kind of citizens should the schools endeavour to produce? On one point agreement is general, namely, that careful attention should be paid to physique, and the practical results of this conclusion will be most significant in the domain of elementary education. The dark and dirty school buildings, which at one time were thought adequate for the purpose, will be condemned by public opinion. Much more time will be given in the elementary school courses to physical training. The need for school games in connexion with the elementary schools will be more generally recognised. In the training of teachers greater stress should be laid upon the study of hygiene. The question of providing proper food for ill-nourished children will become more acute. Steps will have to be taken for enforcing the discharge of parental responsibilities, and for the punishment of those who persistently neglect them. In the sphere of secondary education, care will be needed to prevent mental over-pressure, especially in the case of girls.

The second point upon which agreement is becoming general is the value of training in corporate life as an element at each stage of education. Here the English schools start at a great advantage. No secondary schools in the world do so much as the English to train boys and girls in habits of corporate action. Owing to the greater number of children involved it is much more difficult to give this training in elementary than in secondary schools, but year by year more is being done in this direction through the efforts of the teachers and the more liberal provision of play-grounds and other opportunities for out-of-school activities. The education in which English people really believe is the training of character and of practical aptitude for life, not that kind of education which lays the greatest stress on book-learning, or on the development of purely intellectual aptitudes, or on the imparting of carefully sifted ideas through oral teaching. The view that physical training should bear an important part in education, and that each school should be the centre of strong corporate life, has a strong hold upon English opinion, and may safely be taken as a basis for further educational reform.

The recent conferences show that, on questions relating to the course of study in elementary and secondary schools, opinion is in a disturbed state. Bur there is general agreement that, for reasons of intellectual and moral discipline, those studies which form the backbone of the school curriculum should be so taught as to require persistent effort and mental concentration on the part of the pupils. Hence, great stress is being laid on mathematics and on the teaching of Latin. At the same time, there is a general feeling that our schools are weak in what may be called the *outlook* subjects; that is, in those studies which extend the horizon of the thoughts, stimulate intellectual interest, and form the habit of tracing connexions between cause and effect in the world in which we live. This desire for the development of the *outlook* studies is showing itself in many directions. The best teachers of Greek are endeavouring to give their pupils a more literary interest in the language, and to lay more stress on the significance of Greek poetry, art, and philosophy than on the technicalities of scholarship.* The best teachers of modern languages feel in the same way that strong efforts should be made to interest the pupils in the history, literature, and national ideas of the peoples whose language they are studying. The claims of the mother-tongue and of the study of English literature to a larger share of school-time are widely discussed and almost universally admitted.

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* The recent publication of the Cambridge 'Companion to the study of the Greek Classics' is an indication of this. Much is also being done by the Classical Association to improve the methods of the teaching of the Greek Humanities.

Finally, strong pleas are put forward for the better teaching of geography in schools. The danger of the new movement is lest it should lead to undue increase in the number of subjects taught in schools, and to attempts to crowd into a single curriculum a distracting variety of studies. The right course seems to be concentration on a few lines of work in each school, provided that the teachers themselves have a wide outlook, and that the general atmosphere of the school is liberal and humane.

The cost of providing the kind of education which the nation needs will be very great. This will be the gravest difficulty of the future. It remains to be seen whether the people are prepared to make the sacrifices which will be necessary if the schools are to be so staffed and equipped as properly to do the work that is expected of them. It is encouraging to note that there is an increasing disposition to spend liberally on educational work; but the other claims upon the public purse are exacting, especially those connected with the national defence. The demand for an increase in State contributions to education is likely to raise, before long, serious questions as to the State control of secondary and higher schools. The desire for variety and individuality in our school system, and the demand for largely increased contributions from the State, are not necessarily incompatible, but they represent different tendencies of thought which are not unlikely to come into conflict on practical questions of administration.

The most serious obstacle to educational progress is the scarcity of teachers. This is chiefly felt in primary education, but it is also showing itself in secondary education for boys. The roots of the difficulty are chiefly, but not wholly, economic. In order to secure a steady supply of competent and well-educated men and women teachers, the pecuniary prospects of the teaching profession will have to be materially improved.

At the North of England Education Conference, held in Liverpool at the beginning of January, the most striking fact was the evident turn of professional opinion against excessive inspection. Many have thought that inspection will be generally welcomed in place of external examination, and there is no doubt that for various reasons the latter has been greatly overdone in English secondary education. But experience is showing that inspection, if unwisely pressed, will have as many enemies as external examinations. The system puts great power into the hands of a single man or of a small group of men, and this is especially resented in a country where the schools work on very different lines, and with very different aims. Much depends on the right choice of inspectors at this juncture, and on their tactful discharge of their delicate duties. Another feature of the North of England Conference was the general agreement as to the right method of award of scholarships tenable at secondary schools. There was practically no opposition to the view that scholars should be transferred from the primary to the secondary schools not later than their twelfth year, and that the award of the scholarships should depend on an examination, including both a written and an oral test. It was also agreed that, in the conduct of the examination, teachers experienced in the work of secondary and elementary schools should be invited to take part; that the subjects of examination should follow as closely as possible the course of study at the elementary schools; and that candidates from approved and efficient private schools should be admitted to the competition, as well as those coming from the schools under public authority. The plan of awarding, on the results of an ambitious competitive written examination, conducted by some external authority which employs examiners who do not personally know the schools concerned, scholarships tenable for two years (from fourteen to sixteen) at a secondary school is producing unsatisfactory results. The candidates are crammed; they come too late to the secondary school to get the full benefit of its educational influence; they have been trained too long on primary school methods which are apt to overteach the pupils and to give them too little power of working for themselves; and they are obliged to leave the secondary school when its work is just beginning to tell upon them. But it will be not easy to bring about a quick amendment of those parts of our local scholarship system, which have been planned on wrong lines. The new and better system involves more trouble, more discrimination, more insight, and more expense. Happily, the authors of the new scholarship scheme, which is now being considered by the London County Council, have gone far towards accepting the new principles of award. That part of this plan seems to have been received with general approval. The grave objection to the London scheme rests on the view that a scholarship system ought to aim at bringing forward able recruits for all the higher callings in the community, and should not be so largely devoted to the single aim of inducing boys and girls to enter the teaching profession.

* * * *

The controversy about compulsory Greek in the Preliminary Examination at Cambridge rages in the columns of the *Times*. The weight of the argument is in favour of freedom. The actual voting will probably result in the maintenance, for a short time longer, of the present arrangements. No sensible man disputes the fact that a living interest in Greek literature and philosophy is indispensable to modern culture. The real problem is how to make the communication of that living interest a more important feature of our secondary and higher education than it is at present. When once this aspect of the question has been fairly faced, it will be seen that the humanities in education have nothing to gain from the enforcement of a low minimum of Greek upon dull and unwilling minds. The compulsory requirement of a small modicum of Greek in the first examination at two of our Universities has very little to do with the kindling of keen intellectual interest in Greek literature and in Greek thought. What we ought really to do is to improve the teaching in the schools, to make it more intellectually keen, to shake off the burden of premature specialisation in Greek grammar and scholarship in the early years of secondary education, and to make the profession of teachers more attractive to men of strong literary interest and of high practical capacity. And behind all these questions, lies the graver problem—why is there apparently so little keen intellectual interests in many of the homes from which come the boys who go to the great classical schools? To focus attention upon the rather insignificant requirements of an easy examination is to forget the real issue and to worry about what after all is a detail. For my own part, I am not in the least of the opinion that England has lost intellectual interest. It is a perception of the extraordinary wide range and complexity of the intellectual problems which we now have to face that has for the time produced a certain hesitancy in the English mind and an unwillingness to dabble in matters which require for their fruitful study more time and knowledge than busy people can give to them. Hence there has come a readiness to find occupation for the mind and energies in other matters—some trivial, some unworthy, many practical, or social or artistic. But the power is there all the time. In due course it will burst out again, as it has done many times before in English history, in keen interest in the application of ideas (Greek ideas, as well as the ideas of modern science) to social and political problems. In the meantime, our best course is to improve our elementary and secondary schools, and to secure for them the services of an adequate number of highly competent and liberally educated teachers. It does not seem to me to matter much what Cambridge decides to do about the Preliminary examination at the present juncture. The first step must be the improvement of the secondary schools. That done, greater freedom in the choice of studies will quickly follow. Teachers and pupils will be content with nothing else.

A Conference of over 300 delegates from labour and socialistic organisations was held in London on January 20th, to consider the question of the feeding of school children. The Conference was held at the Guildhall, and was welcomed by the Lord Mayor. The chief resolution declared that: "The State maintenance of children was a necessary corollary of universal compulsory education." In spite of the protest of some influential speakers, this resolution was carried by an overwhelming majority. But it is very doubtful whether it is at all representative of the public opinion of the community as a whole. The uniform State maintenance of all children, implies a communistic State, and the abandoning of the family as the social unit. There is no doubt, however, that a large number of children habitually attend school ill-fed. The number varies with the time of year, and with the conditions of employment. In a large number of cases voluntary organisations already deal with the need. In some cases, however, it seems desirable that the Local Education Authority, with the help of Municipal aid, should itself provide meals for school children in time of need. But, in that case, the Local Authorities should have legal power to compel neglectful parents to take their full share of responsibility. It is probable that the outcome of the present agitation will be a more systematic attempt to combine the provision of meals for needy children with the legal enforcement of parental duty.

* * * *

The need for the reduction of the size of classes in the Public Elementary Schools is steadily coming to the front. The Bishop of Manchester has recently taken occasion to advocate the following reforms :—

1. Schools should be of a reasonable size. Elementary Schools should not have more than 400 scholars under one Head-Teacher.

No class should exceed from thirty-five to forty pupils.

3. Infant Schools should be staffed more liberally than other Elementary Schools.

Similar suggestions have been pressed on the Education Committee of the city of Bradford by the Local Branch of the Froebel Society. There is no doubt that the welfare of our Elementary Schools requires great reduction in the size of the larger classes.

The practical difficulties are :—(1) expense, (2) scarcity of Teachers, (3) the fact that a great number of the school buildings have been designed for the accommodation of large classes. None of these difficulties are, however, insuperable, and we may confidently hope for a gradual improvement in the present conditions.

MICHAEL E. SADLER.

January 26th, 1905.

MUNICIPAL SCHOOLS IN BOMBAY.

SOON after the British power was established and consolidated over the greater part of India, the rulers turned their serious attention to the education of the subject races as the only means of raising them to the level of Western civilization. Happily for India, Macaulay secured the victory of European culture over oriental learning, and Western India was fortunate in having Mountstuart Elphinstone as its earliest and most illustrious pioneer of education. He wrote a series of very able minutes in which he displayed a wide and statesmanlike grasp of the subject. "It is difficult to imagine an undertaking," he wrote, "in which our duty, our interest, and our honour are more immediately concerned;" and for the purpose of carrying out his idea, a society for the education of natives, presided over by himself, was founded in 1820. They began by starting vernacular schools, of which there were 4 Marathi, 2 Gujerati and 1 Hindustani, with a total of 550 pupils, about sixty years ago. The *Puntoji*, indeed, was not the creation of the British power. He and his hedge school with its primitive methods of teaching existed from time immemorial. But Government inaugurated their educational policy, by organizing and systematizing the instruction imparted in indigenous schools, and devising means for extending and popularizing it amongst the masses.

The progress of primary education in its early days was very slow, and not at all commensurate with the growth of the wealth and population of the city. But the Government in the old days were singularly fortunate in some of their educational officers who were themselves at the pains to master the vernaculars, that they might turn their knowledge to the special benefit of the people. Hope prepared a graduated series of Gujerati text-books, while Candy produced a Marathi reading series. The books have stood the test of time for well-nigh half a century and are only now to be superseded by revised text-books, which are under preparation by a committee of experts presided over by Mr. J. G. Covernton.

The control of education was at first under a popular Board which, in course of time, gave place to a properly equipped educational department under a qualified official head. A time came when it was considered that primary education had sufficiently advanced in Bombay to be placed under the care of a special officer, styled Deputy Inspector. For many years the services of a 'half-time' Inspector were considered sufficient, for the number of schools and scholars continued to be very limited. As often as not the officer was a law student, and the modest salary he received kept him going in ease and comfort until he blossomed forth as a pleader. The pay was small, but the distinction was great. Who in the humble rank of pedagogues did not tremble at the name of the *Dec-poo-tee*? Who so recklessly bold and desperately defiant as to hold up his head to him? His word was law; his power was absolute. The controlling agency was away in Poona, and the administration and discipline of the schools in every detail were virtually in his hands.

Things were going on in this fashion when the government passed a law, rendering it obligatory on the Bombay Municipality to maintain and aid primary education in the city. The wording of the legal provision on the subject unhappily left it open to the Government and the Corporation to hold different views as to their respective liability. But the dust raised by the controversy has been laid long since, and irrespective of any interpretation that might be put upon terms of the Act, the Corporation have cordially recognized their responsibilities in the matter, and have, in the main, responded adequately to the calls made upon them; while government, too, have been performing their own part of the duty in a generous spirit. On the transfer of the schools, fifteen years ago, the Government contribution to primary education was Rs. 25,000, to which the municipality responded with a grant of Rs. 39,500. In view of the progressive requirements of elementary education in the city, both the high contracting parties gradually enhanced their contribution, and now the Government grant stands at Rs. 72,768, while that of the Corporation is Rs. 1,24,224. The two grants, supplemented by fees, bring up the total revenue to Rs. 2,19,000 per annum, which will be sufficient for some time to come to enable the Joint Schools Committee to initiate a number of reforms, which they were unable formerly for want of the requisite funds to carry into effect.

When the Committee took over charge of the primary schools, the one crying evil which demanded their earnest attention, was the housing of schools. At their request a systematic enquiry was made into the general question of accommodation, and it resulted in some startling revelations. Several of the houses were found totally unsuited for school requirements and were lamentably deficient in the first hygienic conditions of light and ventilation. There were class rooms which were little better than cells, in which the darkness was just visible enough to serve as a pitiful apology for light. How many children had their eyes permanently injured by the strain to which they had been subjected, is now a matter for abstract speculation upon which the mind is not willing to dwell. There were schools in which the children were packed and huddled together, without the least regard to health or comfort, the space allotted to each pupil, being about a third of the minimum prescribed by the Department. There were buildings which, owing mainly to some inherent defects in their drains and privies, were pervaded by a most offensive stench. I was staggered by the smell which invaded my nostrils on entering one such building, years ago. But it was almost a comfort to find the head-master, a good, old soul, peacefully dozing in his chair, his pupils being engaged the while in some slate-work. I was curious to know how he liked to work in such a sink of insanitation, but he replied that he was scarcely conscious of the offensive odours. They were so constant, and he had so long been accustomed to them, that they were repellent no longer to his senses. Even thus does kindly nature adapt human beings to their surroundings!

A vast improvement has been made in school accommodation under the new *regime.* It cannot be denied, however, that it is still far below the ideal standard. The visitor will still notice many imperfections and deficiencies, which in the existing conditions are almost inevitable. The great difficulties which have to be encountered can be fully realized only by those who have actually to grapple with the problem of the housing of primary schools. Apart from the defects inherent in buildings originally intended for dwelling purposes, the cardinal fact should always be borne in mind that as each elementary school serves but a very limited area, it has necessarily to be accommodated within that area, and in the very restricted field of selection although the best house available may be hired, it may happen to be a very indifferent house after all. While the committee have accomplished a great deal within their means and their opportunities, they have never ceased inculcating on the minds of "the powers that be" that no satisfactory solution of the housing problem is possible unless special buildings on the latest sanitary principles were provided for the schools. It is, therefore, a most gratifying circumstance that the Government and the Corporation have lately been brought to agree to a scheme for providing, in the first instance, seventeen of the comparatively worst accommodated schools with suitable buildings. It has been decided to raise a loan of ten lakhs of rupees for the purpose, and the scheme is at present awaiting the sanction of the Government of India. The wheels of Government proverbially move very slowly, but it is earnestly to be hoped that it will not be so very long before the scheme is carried into effect.

Even as it is, whenever an opportunity has presented itself to the Joint Schools' Committee for having a specially constructed school building, they have not been slow to avail themselves of it. When the new market at Bhuleshwar was projected, it was Dr. Blaney, the first chairman of the committee who proposed the erection of a school building over the market with the result that two of the largest schools for boys and girls, which had previously been but very indifferently housed, have been provided with most commodious, comfortable, and healthy quarters. It was mainly through the influence of another chairman of the committee, the late Mr. N. N. Wadia, that the memorial funds raised in honour of Lord Harris and Mr. S. S. Bengalee were assigned to the Corporation for the purpose of erecting primary school buildings in their names. Furthermore, the Committee have been encouraging landlords, whenever possible, to construct buildings according to special requirements and three schools have thus been suitably accommodated.

There were 62 Municipal and 68 aided schools, when the schools were transferred to the Municipality. With the gradual addition made to their number, the total of Municipal schools now stands at 91, while that of aided schools is 109. The total attendance in the Municipal Schools has risen from 5,800 to 9,700, while that in the Aided Schools has increased from 7,200 to about 10,000 at present. The Committee have thus to deal, directly and indirectly, with the education of close upon 20.000 children; while for their own schools they employ a staff of nearly 400 teachers and servants. The progress would have been still better, but for the disturbance and disorganization caused by the plague. But now that the people have grown accustomed to the annual visitation, which is not followed by such a general scare and exodus as marked the earlier years of plague, and now that the Committee, with the ampler resources placed at their disposal, have a freer hand than before, it may be expected that an impetus will be given to education such as it never had before.

The addition of schools and scholars has been accompanied by a steady improvement in the quality of teachers as well as in the method of teaching. The Committee have been directing their efforts to procure trained teachers, and to this end they have been giving special encouragement to teachers by means of stipends to qualify themselves at the Training Colleges. There is still a considerable number of untrained teachers who have to be employed, and it is to be feared that the race will die hard, because the supply of qualified teachers has never been equal to the demand. Whatever financial difficulties formerly existed in the way of the wholesale employment of trained teachers, they have disappeared in a great measure since the enhancement of the Government grant accompanied by a proportionate increase in the contribution of the Corporation. It will, therefore, be now possible for the committee to import such teachers in larger numbers, if they offer themselves for service at a reasonable remuneration. With the object of attracting the best talent to Bombay, the Committee have been paying better salaries on a higher scale of pay than that fixed by Government and in force throughout the rest of the Presidency, and there is a proposal awaiting the sanction of the Corporation for a further rise in the salary scale. Trained teachers are, however, not all in all. Efforts should also be made to raise their average moral standard, if their teaching is to be of real and lasting value to the young ones.

The Committee have been unceasing in their endeavours to promote the education of Mahomedans and the backward classes of Hindoos. There were only two Urdoo Schools under Government, whereas their number now stands at twenty-three, including three well-attended schools for girls. A regular Urdoo department having thus been constituted, it was placed under an Urdoo inspector. Koran reading has been introduced with the object of popularising the schools. The backward classes of Hindoos have been encouraged by reduced fees to receive education, while the low-castes have three free schools specially opened for their benefit.

The Committee have supplied their schools with kindergarten materials, wall-pictures, and other appliances, and with their aid the teachers are enabled to direct their efforts towards giving instruction in the way best calculated to develop the faculties of the children so as to form a healthy and harmonious combination. The day is not far distant when mere cramming and verbal instruction, imparted according to the rule of thumb, and enforced by the rule of the rod, will be a thing of the past. With the training of the mind the claims of the body are not left unattended to. Drill and other physical exercises have been introduced, and cricket kit has been supplied to schools having a play-ground in the neighbourhood. A commencement has also been made with drawing, and it is to be hoped that it will soon be followed by manual training. It is also desirable that due provision should be made for teaching music in girls' schools.

It is not necessary to enumerate other minor reforms to show that the Committee have, in their own quiet and unobtrusive way, done much solid good, so far as it was practicable within the means at their disposal and in the circumstances in which they were placed. A great deal, however, remains to be done, and the question which, in my opinion, claims most earnest attention is how to bring all classes of children in Bombay within the sphere of primary education. It is sad to observe that even in Bombay, perhaps the most enlightened city in India, but a small fraction of the population of school-going age attends elementary schools, and among the children receiving education the proportion of girls to boys is barely one in three. How to advance education in general, and female education in particular, how to bring the masses to recognize the benefits of education, so far as to send their children to school and to give cordial and intelligent co-operation to teachers, is a problem which will press itself for solution. It will have to be considered whether the best solution of the problem is only possible under a system of compulsory education. The Hon. Mr. Ibrahim Rahimtulla has for some years past been hammering away at it in the Bombay Legislative Council, and the proposal is fraught with such potentialities for good, that it demands serious attention, instead of being summarily dismissed as utopian and impracticable. The general proposition cannot be denied, that the country is not at all ripe for compulsory education, nor is the first city in India either. But if a beginning has to be made, and that, too, cautiously and tentatively, there is no city where it is more likely to have a fair trial than Bombay, and in Bombay, too, it should be confined, in the first instance, to one of its most advanced wards. The experiment, started within narrow limits and hedged round with necessary safe-guards, may be carefully tried, and its actual results will afford means for judging whether it can be extended with advantage.

M.

HARMONICAL PROGRESSION.

A SERIES of quantities is said to be in harmonical progression when their reciprocals are in arithmetical progression. Thus the series $1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4} \cdot\cdot$ are in harmonical progression, since their reciprocals $1, 2, 3, 4 \,.\,.$ are in arithmetical progression. The term "harmonical" is derived from the fact that musical strings of equal thickness and tension will produce harmony, when sounded together, if their lengths be as the reciprocals of the arithmetic series of the natural numbers 1, 2, 3, 4, etc. These natural numbers may succeed each other in close order or at intervals as we see from the following illustration. The wave lengths of the primary notes and harmonics in an open organ-pipe are in the ratio of $1 : \frac{1}{2} : \frac{1}{3}$, etc., and those of a closed pipe are as $1 : \frac{1}{3} : \frac{1}{5}$, etc. It would indeed be most pleasant if the diatonic scale itself submitted to the law of the harmonical progression. At first sight it fails to do so, but marking the vibration-frequency of the principal notes of the musical scale thus

C	D	E	F	G	A	B	c.
$\frac{1}{8}$	$\frac{1}{9}$	$\frac{1}{15}$	$\frac{1}{6}$	$\frac{1}{9}$	$\frac{1}{8}$	$\frac{1}{15}$	

we discover that the interval of a full tone is denoted by the additional multiplier $\frac{1}{8}$ and $\frac{1}{9}$, the start of an harmonical progression.

Besides the harmonical series, there is another succession of numbers, in which Kepler discovered a law of harmony, and thus transformed into an harmonical progression of its own kind. But to understand Kepler's triumph, we must turn our attention to the Harmony of the Spheres.

Harmony, says Quintilian, is but the consonance (*consonantia*) of lower and higher pitch of tone in song and music. The word "harmony" itself means adaptation, from the Greek ἁρμόζω, to adapt. A simple experiment of adaptation of tone is the following. By pressing a finger round the brim of a wine-glass, we set up vibrations of sound, and by varying the quantity of fluid we pour into the glass, we regulate the height and depth of tone. Had we seven such glasses we could tune them in accordance with the seven principal notes of the musical scale, and the result would be a primitive kind of harmonium. If, instead of wine-glasses, a solid sphere of glass were taken closely surrounded by a spherical glass-shell, and this again by another, and so on, and if instead of the friction caused by the movement of the finger, the spherical shells revolving with different velocities around the centre of the immovable solid sphere were set rubbing one against the other, the musical sounds thus produced would in reality establish a harmony of the spheres.

The poetical mind of times past transferred the idea, which such an experiment suggested, to the celestial bodies, and led by the *prima facie* aspect of the heavens, dreamed of a real harmony of the spheres. According to ancient conceptions, the centre of the universe was the earth, round which the seven planets revolved. Each of these planets was conceived as though fastened to a point within a spherical shell and carried by it in rythmic movement round the earth, whilst all were encompassed by the last and largest, the sphere of the fixed stars. The eight spherical shells were considered to consist of transparent, crystal-like material, so that the interior sphere allowed a view of the spheres more remote. All these spheres, one outside the other, were supposed to revolve in movements different one from the other, and to cause by their friction a concert of tones, the harmony of the spheres.

Pythagoras was the first to propose this theory. According to Pythagoras, says Pliny, the distance between the Moon and the Earth is representable by the length of the string of a full tone, while the Moon and Mercury, Mercury and Venus are separated by the length of half a tone; from Venus to the Sun we have one tone and a half, whilst from the Sun to Mars we get again a full tone; from Mars to Jupiter, as well as from Jupiter to Saturn, one half tone-length intervenes; lastly, Saturn and the heaven of the fixed stars are at an interval which corresponds with the length of a string giving one tone and a half. Thus seven tones are said to constitute the harmony of the spheres, the canticle of the universe. Cicero in his "*Somnium Scipionis*" witnesses to the belief in the existence of this concert, and Philo is so convinced not only of the reality, but also of the marvellous magnificence of this harmony, that he says a human being allowed to listen to such a symphony would forget all else, even to going without food and drink. St. Augustine does not call in question the possibility of the celestial symphony, but—together with the majority of scriptural interpreters—he prefers to explain in a figurative sense the passage of the Bible: "Who can make the harmony of heaven to sleep?" (Job. XXXVIII. 37) which St. Ambrose and others quoted in favour of the realistic conception. The critical acumen of St. Thomas Aquinas, following in the footsteps of his guide and philosopher, Aristotle, shows the weakness of the thesis maintaining the harmony of the spheres.

However, notwithstanding these doubts, the theory lived on and acquired new strength from the poets, Dante, Goethe, Shakespeare.

> "Quando la ruota che tu sempiterni
> Desiderato, a se mi fece atteso
> Con l'armonia che temperi e discerni.
>
> . . . . .
>
> La novità del suono, e'l grande lume
> Di lor cagion m'accesero un desio
> Mai non sentito di cotanto acume."
>
> (PARADISO.)

> "Die Sonne toent nach alter Weise
> In Brudersphaeren Wettgesang,
> Und ihre vorgeschriebene Weise
> Vollendet sie mit Donnergang."
>
> (FAUST.)

> "There's not the smallest orb which thou behold'st
> But in his motion like an angel sings,
> Still quiring to the young-ey'd cherubims,—
> Such harmony is in immortal souls;
> But whilst this muddy vesture of decay
> Doth grossly close it in, we cannot hear it."
>
> (MERCHANT OF VENICE.)

The poet John Milton hesitates to adopt the views of Dante and Shakespeare and leaves the dispute to those who discuss or "talk about" the Ptolemaic system.

> They pass the planets seven, and pass the fixed,
> And that crystalline sphere whose balance weighs
> The trepidation talked, and that first moved.
>
> (PARADISE LOST.)

In opposition to such juvenile beliefs and poetical adornments, real astronomers, especially from the time of Ptolemaeus, understood by the harmony of the spheres a systematic constellation or arrangement of the celestial bodies governed by certain fixed laws. The first who began to solve the enigma was the earnest thinker Kopernikus, the architect of the new Astronomy, who after a period of fifty years of unceasing labour changed the planetary system into the solar system, and calculated the mean distances of the planets from the sun as follows:—

Mercury	Venus	Earth	Mars	Jupiter	Saturn
0·39	0·72	1	1.52	5·20	9·54

Although it seemed to be utterly impossible to detect law and harmony in these numbers, the great Kepler after twenty years of indefatigable thinking and reckoning found the solution of the mystery, which, to quote his own words, God had kept for himself for six thousand years, and Kepler's harmonic law:

Quadrata sunt temporum periodicorum,
Ut cubi semiaxium transversorum,

(the squares of the periodic times are proportional to the cubes of the mean distances,) is the final unravelling of the entangled strings of the harmony of the spheres. He stands on the apparently weak pedestal of the naive thinking of former ages, resting his one hand on the shoulder of Kopernikus and holding in the other his "*Harmonices mundi.*" This work, published in the year 1819, contains the three immortal laws that bear Kepler's name—the three notes, which the genius of Newton combined into one chord, the "*Attractio universalis.*"

J. DEGEN.

MARATHI ORTHOGRAPHY.

DURING the last months of 1904 a controversy has been going on in the Marathi-speaking world with regard to certain modifications in the orthography of Marathi which the Educational Department of this Presidency proposed to introduce in its new series of Readers. The controversy is about a matter of considerable importance and of great interest to all who are concerned with primary education or are students of Vernacular literature, but it is one in which only advanced scholars of Marathi and Sanskrit are fitted to engage. We frankly confess ourselves, therefore, incompetent to take sides in the dispute, much more to decide between the arguments of the disputants. We shall content ourselves with a brief account of the origin of the controversy and a summary of the arguments of the contending parties. As the President of the Vernacular Text-books Revision Committee and the Director of Public Instruction are now agreed that, in the face of the strongly expressed opposition to the proposed modifications, it is not *expedient* to introduce a new method of spelling in the first edition of the new text-books, and as Government in a recent resolution endorse that opinion, the urgency of the question has now been removed. But since Government do not bind themselves with regard to future editions, and the President of the Revision Committee still holds that the reform suggested by the Committee is "highly desirable," while the Director of Public Instruction seems to incline to the arguments of the Committee's supporters, it is on all accounts desirable that the whole matter should be ventilated, so that opinion may be ripe when the time comes for further revision of primary school text-books. The publication of the papers relative to the subject shows that Government too will welcome further discussion.*

The controversy arose in the following way :—There are in Marathi many words of Sanskrit origin which in theory are spelt in accordance with the rules of Sanskrit. But this spelling no longer exactly represents the Marathi pronunciation in common use, and in consequence is often disregarded. The reformers demand that the spelling shall be adapted to the pronunciation in actual use, on the ground that it will then be in accordance with the laws and genius of the Marathi language, and will be easier for children to learn. Their opponents affirm that those who write the words as they are pronounced do so from carelessness and ignorance, and deny that the change in pronunciation is sufficient to justify a change in the spelling. Mr. K. N. Sane and some others appear to have begun the agitation for reform in 1900, when they published a book on Marathi orthography. They received some support from a General Text-book Conference held at Poona in October 1902, when a resolution was adopted in favour of securing uniformity of spelling in departmental books.

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* We shall be glad to publish correspondence on this subject from competent scholars.—*Editor.*

When the Text-books Revision Committee was formed in October 1903, the reformers, through Mr. Sane, a member of the Committee, proposed to it the consideration of the reforms. The Committee approved of some, but consulted other experts, including Dr. Bhandarkar, and these approved them in various degrees and forms. On the strength of this the Committee drew up certain rules. Meantime the opponents of reform, having learnt of the proposed changes, formed themselves into a committee under Sir Balchandra Krishna, collected opinions unfavourable to the reforms, and asked for a conference. This was granted, and the Conference met on the 30th September 1904. After lengthy discussion, the rules originally formulated by the committee were considerably modified, and were accepted in the following form (though there were dissentients even to the modified forms):—

(1) The ending इ and उ of declinable Sanskrit words should be written ई and ऊ (long) respectively in the nominative case in Marathi:—गिरी, बुद्धी, तरू, गुरू, धेनू, etc. In other cases, they are already lengthened :—गिरीस, गुरूचा. But in compounds such as the following the short vowels will remain unchanged, *e.g.*, मतिभ्रंश, बुद्धिवैभव, धेनुहरण, गुरुसेवा. *N.B.*—Indeclinable, *e. g.*, परंतु, इत्यादि, आणि etc., should be written as at present.

(2) Declinable Sanskrit words ending in consonants when used in Marathi should be written as ending in अः :—भगवान for भगवान्, विद्वान for विद्वानः : indeclinables should be written as at present, *e. g.*, क्वचित्, अर्थात्.

(3) Anuswars not traceable to Prakrit or Sanskrit or in the pronunciation of educated people should be done away with :— धावतो, सवय, शेपूट, लाकूड, कवि, कोपर, ऊस, भोकणें.

Sir Balchandra and his Bombay Committee, however, refused to accept these resolutions, asked for a reconsideration of the matter, obtained a letter from Dr. Mackickan in their support, and finally, on October 31st, 1904, petitioned Government with the result already mentioned.

The arguments of the conservatives are set forth in their memorial to Government. They urge (1) "that as regards Sanskrit words ending in short *i* (इ) and short *u* (उ) when adopted in Marathi, the present practice is to write them in accordance with Sanskrit usage, that is, with the short *i* (इ) or short *u* (उ), as the case may be, according to their original forms. This practice is known to be in existence for over five centuries. All Marathi poets, from Dnyaneshwar to Moropant, whose works form the richest treasure of Marathi literature, have mainly written these words with short *i* (इ) and *u* (उ), Moropant more especially conforming to the Sanskrit orthography." From later times they adduce the example of Bal Gangadhar Shastri, Jambhekar, Vireshwar Chhatre, Major Candy, Dadoba Pandurang, and others. (2) That the tendency to lengthen the final vowels in pronunciation of words ending in short *i* (इ) and short *u* (उ) "is not in all cases so decided as to justify a wholesale conversion of a final short vowel into a long vowel," and even assuming such a tendency "it cannot justify a corresponding departure in orthography. Orthography deals with the correct writing of words. Such correct writing ought not to be made to depend upon the caprices and uncertainties of individual pronunciation, but should be based on fixed rules derived from etymology and the usage of scholars and standard authors. As the words in question are taken bodily from Sanskrit, the claim to write them according to the language of their origin is well grounded. On the ground of usage, too, a period of even half a century may well be taken as a sufficient warrant for not making a new departure." (3) That it will create confusion rather than simplify orthography, raising different standards of correct writing. The Departmental Readers will be written on one system, the vast body of independent literature on another. Dictionaries and grammars will have to be remodelled and reprinted. (4) That the authority of Dr. Bhandarkar rests rather on his Sanskrit than his Marathi scholarship, and that Professor Kathavate, who opposes the change, is entitled to equal respect. (5) That Sanskrit words have been retained in their original forms in Guzerati and Kanarese. (6) That there is no necessity for such changes, and that the matter being one "which peculiarly belongs to the community itself and in which the Government have no stake or interest whatever," "the enforcement of the new rule will be regarded as an unwarrantable interference on the part of Government."

The case for the reformers is very ably stated by Mr. Sane in a lengthy note. He affirms that the proposed reforms are in accord with (1) the genius of the Marathi language and its laws of pronunciation, and (2) the history and etymology of that language. "What is called the genius of the Marathi language is not a fanciful or new-fangled theory as has been persistently affirmed by the memorialists. The natural tendency of the Marathi language is to lengthen the final vowels, *e. g.*, Jāī (जाई), Juī (जुई), Lekhanī (लेखणी), Valu (वाळू), or the vowel of the penultimate syllable of words ending in a silent 'a' (अ), *e.g.*, Rīta (रीत) Tūpa (तूप). This genius or law of Marathi was carefully noticed and scrupulously followed so long ago as 1831 by such an accurate and critical scholar as J. T. Molesworth, than whom no one has paid greater attention to the study of Marathi. In the preface to his Marathi-English Dictionary he distinctly states the law in the following words:—'It is a sacred rule, notwithstanding the practice of careless writers, to spell the initial syllables or syllable of Marathi polysyllables or dissyllables with the *short* vowel, and the concluding syllable with the *long* vowel; further to write all monosyllables excepting such as have Anuswars (as Unta उंट etc.) with the long vowel. This is the *unvarying law* of the dictionary excepting solely the case of imitative formations, which as imitatives have of course both or all their syllables of the same quantity.'" He admits that Molesworth did not alter the spelling of Sanskrit words, but argues that, as he applied his law to all other foreign words, this was due to the Sanskrit Pandits who assisted him, and that the latter were not acquainted with the modern science of comparative philology or critical study of the Prakrit languages from which Marathi is directly derived.

Mr. Sane then quotes the authority of Dr. Bhandarkar, who in a minute expressed his approval of the rules proposed by the Text-Book Committee, but thought it should be declared that Sanskrit forms would not be considered erroneous if anybody chose to use them.

Mr. Sane next proceeds to refute the assertion of the conservatives that the Sanskrit form has prevailed for over five centuries. "There was no prose literature worth the name in Marathi before the establishment of British rule in the Maratha country, and whatever there was, was all written in the Modi Script, which makes *no* distinction between long and short '*i*' (इ) and '*u*' (उ) vowels. It is true there was a considerable body of poetical literature written in Nāgari character, which distinguishes between long and short vowels, and it is also true that the poets wrote the ending '*i*' (इ) and '*u*' (उ) of Sanskrit words either short or long according to the exigencies of the metre. The earlier Marathi poets, however, such as Dnyandev, Namdev, Eknath wrote in Ovis and Abhangs, in which there are no such strict rules as to the number of short or long syllables each line is to contain, and *it cannot be judged from their works whether they intended to write these vowels long or short, as the manuscripts differ very much in this respect.* The later poets, too (Ramdas Vaman, Moropant, etc.), who wrote in Sanskrit metres, very often infringed what is called Sanskrit usage with respect to short '*i*' (इ) and '*u*' (उ). *The orthography of Marathi verse,* which has thus less fixity and which consequently varies, *cannot, therefore, be taken as a standard for Marathi prose.* He continues that the present practice is of only about fifty years' duration, and was initiated by the Educational Department when it adopted the Nāgari character in its school literature; it therefore, may be reformed by its creators. As regards "the so-called Sanskrit usage," he urges, "what the memorialists maintain as Sanskrit forms are *crude forms—pure grammatical abstractions—never appearing independently* in that language actually spoken or written. Crude forms or bases like Budhi (बुद्धि), Ravi (रवि), Dhenu (धेनु), and Guru (गुरु), become long by means of the Visarga, as Budhis (बुद्धिः), Ravis (रविः), Dhenus (धेनुः), Gurus (गुरुः), when used in the nominative case. The same is the law of the Prakrit languages also, where the Visarga is dropped and the final short '*i*' (इ) and '*u*' (उ) are *regularly* lengthened before using the words in sentences, as Budhi (बुद्धी), Ravi (रवी), Dhenu (धेनू), Guru (गुरू), etc. *The present practice of writing Sanskrit words ending in short 'i' and 'u' in their crude forms is thus neither strictly Sanskrit nor Prakrit, and certainly not Marathi.*" As to the alarm that dictionaries and grammars will have to be remodelled and reprinted, he says, "the dictionaries, which give words in their crude forms, will not be affected by the rule, and only a slight change embodying the rule in question (the lengthening of 'i' and 'u' in the nominative case) will be necessary in grammars, as in the case of the amended Rules 2 and 3 which are accepted by the memorialists." And as a matter of fact he concludes, there are numerous examples in Marathi books and newspapers of this rule No. 1 being unconsciously followed.

PUBLIC INSTRUCTION IN BOMBAY, 1903-04.*

Population.

Males	13,104,675
Females	12,377,740

Male scholars, 490,438, or 24·95 of males of school-going age; female, 87,922 or 4·74. Number of institutions, 12,460. This means a decrease of 15,607 male pupils in public institutions, and of 1,200 female; an increase of 292 public institutions. The decrease, visible in all classes except Native Christians and Parsis, is due to plague, by which "progress and development are prevented, the population is panic-stricken, schools are disorganised, educational statistics vitiated, and the administration seriously affected." Plague carried off 333 teachers, 7,404 pupils, and

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* Report by the Hon. Mr. E. Giles, C. I. E., Director of Public Instruction.

40 clérks or servants, 7,777 in all. On March 31st, 1904, 1,093 institutions, teaching 71,206 pupils, were closed from plague. Statistics "convey but a faint idea of the harm done to education. The wastage of so many precious years in the life of a school-boy, the loss of mental and moral stamina consequent upon the frequent exhibition of death scenes, the incessant dread of one's own turn coming next," these and other effects, though less calculable, are equally serious.

Total expenditure on public instruction, Rs. 85,71,441, of which Provincial Funds, Local Funds, Fees, Native States, and "other sources" contributed 30, 11, 20, 13, and 17 per cent., respectively: the increase of Rs. 3,54,653 is mainly due to increased grants to Primary Schools, to expenditure on the Text Books Revision Committee, and on Boarding Houses.

Collegiate Education.

Colleges, 15; students, 3,454. All the Arts Colleges show an increased attendance, especially the Wilson, Grant Medical, and Fergusson Colleges: the fee receipts of Elphinstone College reached their highest figure. Total expenditure, Rs. 6,22,809. Examination results:—

	Appeared.	Passed.
M. A.	43	28 (four first class).
B. A.	486	356
B. Sc.	5	2
LL. B.	174	102
L. M. & S.	122	65
L. C. E.	37	25

"The neglect of the Science Degree in this Presidency is most marked, but can, perhaps, be explained by the fact that the course of study is very difficult." The question naturally rises: Is the teaching adequate? The progress of, or proposal for, new hostels is a prominent feature of each College report. A lack of neatness and cleanliness in the habits and dress of students is noted. The Guzerat College is recommended to improve the efficiency of its instruction in order to check the migration of its students.

Secondary Education.

424 schools for boys, of which 106 are High Schools and 318 Middle Schools: scholars, 40,924: 68 girls' schools with 5,098 girls. Direct expenditure, Rs. 20,72,027. Of candidates sent up from schools 57·6 passed the Matriculation, and 49 per cent. the University School Final Examination. The latter has now been transferred to the management of the Educational Department. Government High Schools "are year by year fulfilling more thoroughly their office as model High Schools." There is "a growing tendency to pay more regard not only to the qualifications of teachers, but to their instruction in educational methods," and a "growing desire for a knowledge of English for trade purposes."

Primary Education.

Boys' schools, 8,452 (an increase of 192), with 410,400 pupils (a decrease of 18,382); girls' schools, 867 (an increase of 92), with 49,322 pupils (a decrease of 1,135). The decrease of pupils is due to plague, the increase of schools to the increased grants sanctioned by Government. In Sind, "100 new schools were actually at work within three months of the announcement of the enhanced grants." Much has been done to instruct teachers in the newer methods of teaching, and all the Inspectors report the "gradual infusion of a new spirit of intelligence and enthusiasm among masters." At Ahmedabad and some other places there are signs that a smattering of English is coming to be preferred to an advanced knowledge of the Vernaculars. Aided schools tend to disregard modern methods and the revised standards. Night schools even in Bombay rarely succeed. "At present the demand for education among adults of the working classes is practically non-existent." Girls' schools suffer from lack of not only trained but even of fit teachers. An improvement in the quality of female education in Sind is attributed to the visits of the Inspectress.

Education of Special Classes.

The total number of Mahomedan pupils is 91,473, a decrease of 1,820. But the increased number of Mahomedan candidates for the Training College, and for higher education, the greater number and efficiency of Mahomedan Girls' Schools, and the development of the indigenous Mulla School in Sind are signs of progress in this community. The great difficulty, as usual, is the lack of trained teachers. Experiments are being made to improve the education of the boys of hill tribes; at Thana a larger extension of schools and a liberal system of scholarships has been made; in Surat, Kaliparaj boys are being trained in a boarding school to teach their own people, and the same method is proposed at Peint.

Special Instruction.

Normal schools have suffered from plague, but progress has been made by the addition of new buildings at Poona, Dhulia, Dharwar, and Hyderabad, and by the plan of recalling old masters for a renewed training in modern methods. Of 16,606 teachers, there are now 6,037 trained and 3,915 certificated. Special proposals for a large development of the School of Art are under consideration by Government. A Conference on Industrial and Technical Education formulated resolutions in favour of developing normal classes in connection with the large central institutions, the expansion of such institutions and their inspection by experts, and the systematic development of the hand-loom industry. State Technical Scholarships in connection with Textile Industries were approved. "Figures show that there is an increasing demand for Commercial Education."

Miscellaneous.

The chief changes in the administration were the appointment of an Assistant to the Director of Public Instruction, and of Inspectresses in Sind and the Northern Division. The co-operation of Revenue Officers is said to be ever ready and available and to be of the highest value. The Second Grade Certificate Examination was held for the last time, and is to be superseded by what was known as the Third Grade Examination. The School Final Examination will henceforth be held by the Educational Department and qualify for the lower grades of Public Service. Physical education shows progress. Regular drill is becoming more and more a feature of all Secondary Schools, and Municipal Boards are supplying in greater numbers special gymnastic teachers for Primary Schools.

The Committee appointed to revise Vernacular Readers had at the end of the official year arranged a complete plan for the Series, selected subjects for lessons in all the books, and practically completed the Primer and first two books. The Committee has the cordial co-operation of scholars throughout the Presidency.

The rules for Government Scholarships in Middle and High Schools were amended so that boys duly certified to be poor should be excused payment of fees, a change which increases the value of scholarships by the value of the fees.

The Director sums up the policy of the year under review as follows:—

(1) In Primary Education, to reserve the expenditure of Municipal and District Local Boards exclusively to Primary Education, to maintain a close supervision of their administration, to revise their courses of instruction and Reading Books, and to develop rural schools for the agriculturist.

(2) In Secondary Education, to improve the quality of the education by providing additional facilities for training teachers. Teachers are now almost exclusively graduates. Training Colleges are being enlarged. Masters are being re-trained, the inspecting staff enlarged.

(3) The enlargement or erection of Hostels in connection with Secondary Schools and Colleges.

(4) Revision of the Grant-in-Aid Code, with the effect of abolishing the system of payment by results.

THE NEWS OF THE MONTH.

BENGAL.

At a meeting of the Senate of the Calcutta University, Sir Gurudas Banerjee moved that as the method by which the provisional Syndicate had been elected was in contravention of the provisions of the Statute, the Senate could not consider the provisional Syndicate's recommendations. Sir Gurudas urged the same point as had been raised in Bombay, *viz.*, that the members of the provisional Syndicate were elected by the separate Faculties and not by the Senate as a corporate body. A long debate followed, and finally an amendment, proposed by Mr. Justice Pargiter, was carried that consideration of the proposal should be deferred till a judicial decision had been arrived at, and that in the meantime the Senate should proceed to the current business of the University. What followed is curious. It was proposed that only the urgent items on the agenda should be considered, and then at the Vice-Chancellor's suggestion it was proposed and carried that the meeting should be adjourned for a week. Thus the effect of the amendment was destroyed, and practically the objectors carried their point.

The introduction of a bill to validate the action of the various Senates has cut the Gordian knot in which they have entangled themselves.

The committee appointed by the local Government to consider the question of introducing commercial education at the Presidency College has drawn up a curriculum containing compulsory and optional subjects, which it recommends should come into force not later than June this year. The Bengal Government has decided not to offer any scholarships in commercial subjects in view of the reduction which it has sanctioned in fees payable at College. The committee has approved of a proposal that local examinations should be adopted in preference to London Chamber of Commerce examinations, and suggest that the setting of papers for examination should be left to an examination board, to be constituted for the purpose, and on which educational officers and representatives of the Bengal Chamber of Commerce and Bengal National Chamber of Commerce should sit; that certificates, given by the Education Department to students who pass examinations, should be endorsed by the Bengal Chamber of Commerce, and that the two Chambers should be requested to publish lists of successful examinees. While the Government of Bengal has declined to lead the way in the direction of offering prizes and scholarships, it has intimated its willingness to permit such inducements to be offered privately. The Remington Typewriter Company offers three gold medals to students who acquire the highest efficiency in typewriting. The Committee of the Bengal Chamber approves the scheme in its final shape, and considers that, if classes and examinations are taken advantage of by students, "a great improvement will take place in the attainments of clerks available for mercantile employment."

In our last number we mentioned the plans of the Association for the Advancement of Scientific and Industrial Education for establishing scholarships to aid students to complete their education in Europe. Further details of the scheme are supplied by the *Indian Economist*. The Association proposes to raise every year a sum of a lakh of rupees, exclusive of collection, etc., to be allotted as follows, subject to such modifications as the subscribers may hereafter suggest:—(1) Rs.25,000 for scholarships to enable properly qualified students to visit Europe, America or Japan for studying the arts and industries of those countries. (2) Rs.40,000 for advances, when necessary, to properly qualified Indian experts returning home from foreign countries, to enable them to start industries or impart instruction in them. (3) Rs.10,000 to be given as scholarships to enable distinguished graduates of Calcutta University to prosecute their studies in science in Europe or in America. (4) Rs.25,000 for equipping a central laboratory for the use of students attending the Colleges of Calcutta, particularly the private Colleges. The Association is inviting subscriptions, the minimum being four annas a year, from all who have at heart the good of their country. Everybody paying four annas a year will be enrolled as a member, and the funds will be entrusted to Trustees to be elected by the subscribers at a meeting held for the purpose. It is not clear from what sources so large an annual income is to be raised, if not by collection.

BOMBAY.

Sir Pherozeshaw M. Mehta, Sir Balchandra Krishna and other protestants against the legality of the election of the provisional Syndicate have applied on the Appellate Side of the High Court for a rule *nisi* and interim injunction to restrain the provisional Syndicate from conducting the executive business of the University. Mr. Justice Russell refused the interim injunction and postponed the further hearing till fresh notices could be issued to other members of the Senate, so that they might be heard on the case. The defendants undertook not to do in the meantime any acts beyond the internal management of the University.

The following resolution by the Bombay Government is issued :—The Government agree with the President of the Vernacular Text-Books

Revision Committee and the Director of Public Instruction that it is not expedient to introduce the new method of spelling which has been objected to in the first edition of the new text-books. We summarize elsewhere the views of eminent scholars for and against the proposal expressed in the correspondence published by Government, who, be it noted, recognise that all are equally actuated by a desire to improve Marathi orthography.

A correspondent in the *Times of India* calls attention to the Sir Mangaldas Nathubhai Technical Scholarships, which are intended to enable students to study in England. He points out that none of the eight scholars now in England are first class graduates, and that the sum allotted to them comes to only about £110 a year, which, he says, speaking from experience, is insufficient to cover the cost of travelling and living and the fees of a first class institution. Consqeuently only those who have additional means of their own can benefit by them; or, if a poor student accepts them, he must be content to seek his training from a cheap and second-class institution. He suggests that the University should reduce the seven scholarships to six and raise the value to £145 per annum by the addition of the balance which has accumulated from the scholarships remaining unutilised for years.

The Taylor High School for boys, a Methodist institution in Poona, has had to close its doors for want of funds. The school has both boarders and day-scholars. The former, who are on leave at their homes for the Christmas vacation, have accordingly been advised of the closing of the school. The school has been in existence some eight or ten years.

On Friday, January 21st, the past and present students of Elphinstone College met to entertain Sir Pherozeshah M. Mehta and to present him with a massive silver bowl in recognition of the honour of knighthood recently conferred upon him. A portrait of Sir Pherozeshah is, in addition, to be painted and hung in the College Library. Principal Macmillan presided, and dwelt upon the eloquence of Sir Pherozeshah and the services which he had done to the University and the interest he had always taken in his old College. Sir Pherozeshah, in reply, gave an account of college work in his undergraduate days and the interest which the then Principal, Sir Alexander Grant, had taken in his pupils.

The distribution of prizes at St. Peter's Girls' High Schools took place at Khandalla on December 20th. Father Nicholson read the report, which showed that the numbers on the roll had doubled in the last year, and that the Inspector considered the buildings among the most satisfactory he had seen.

Mr. A. L. Covernton, Professor of English and History, Elphinstone College, is appointed to be Inspector of European Schools in the Bombay Presidency and the Central Provinces, with effect from 15th April 1905.

Mr. E. H. McDougall, temporary Professor of English, Deccan College, Poona, is appointed to be Professor of English and Histroy, Elphinstone College, but holds his present appointment until the end of the current term.

The Government of India has sanctioned the grant of an honorarium of Rs. 600 to Mr. Gamdevia, Librarian at Elphinstone College, for supervising the printing of the Sirdar Dastur Hoshang Jamasp's text book.

BURMAH.

The annual prize-distribution took place at the Government Engineering School at Jusein on January 26th, the Lieutenant-Governor giving away the prizes. The Principal's report urged the retention of the Lower Subordinate Class as a technical school, and that the school should be improved by affiliation to the Calcutta University up to the First Examination in Engineering, the addition of a mechanical and electrical side with shops and machines worked electrically, and the creation of stipends and scholarships on the same scale as in the lower classes at Roorkee and Sibpur. Sir Hugh Barnes said that times had not come for turning the school into a college on the scale of Roorkee or Sibpur, and that he was doubtful if there was justification for even the changes suggested. The first thing was to improve the course of studies absolutely essential for an engineering subordinate. He agreed as to the desirability of changing the site, strengthening the staff, raising their pay and increasing the laboratories, and said that he hoped to assist in advancing these improvements.

The Bishop of Calcutta gave away the prizes at the Diocesan Boys' School, when Mr. Lee, the Principal, spoke of the encroachments of special subjects on the time allotted to compulsory studies, and urged the primary importance of a general training and the strengthening of moral and physical character. He quoted a saying of someone: "After all what we want for India is not so much M. A.'s or B. A.'s as more men who can be trusted with small sums of money." He expressed a wish, with which most teachers will sympathise, for a book of nature study for India and Burmah. English publishers are too apt to think that what does for English boys will do equally well for India.

CEYLON.

The great event of the month is the announcement that Government have decided on awarding two University scholarships instead of one, from 1907 or (if a sufficient number of candidates come foward) from 1906. Each scholarship will be of the value of £200 for three years, and will be awarded on the results of the intermediate examinations of the London University in (a) Arts, (b) Science. Scholarship candidates will be allowed to substitute two higher classical papers or two higher mathematical papers or the French or German papers in the Arts Examinations. For the purpose of passing the Intermediate Examination they will be allowed to take up the French and German papers also. Candidates taking the Science examination will have to take also the English section of the Intermediate Arts.

The result of this announcement, hinted at in former letters, will be a great change in our educational system. The London University examinations will henceforth be our standard, and the curriculum of the higher schools will be adapted accordingly. The change does not meet with universal approval. The *Ceylon Observer* quotes one teacher as saying: "I have protested as loudly as I could against a system that involves the learning of Greek and French (both of them of little practical use in Ceylon) at the expense of the study of commercial and practical subjects, but to no avail. The London University is very illiberal in choice of subjects for its examinations; and education will now get more and more into one set groove. That to me is a deplorable result. Again, there is hardly anybody available to teach Greek and French in Ceylon. The result is that the Head of a College has to give the bulk of his teaching hours to language-work of this sort. Whereas his time could be far more profitably spent on *English* and subjects of practical import." The article then goes on to say: "In Ceylon how little scope is there for the results of the Higher Education—in the classics especially—as compared with the outlook for a thoroughly practical, commercial, industrial and agricultural education. Agricultural and Vernacular instruction should secure the great bulk of public money available;

Commercial and Industrial (Technical) next; and only a fraction should go to Higher Classical Instruction, in which, indeed, the aim should be to make any course well-nigh self-supporting by adequate fees. It is at any rate most unfortunate that the Principal of a High School or College should, at this time of day in Ceylon, have to say he has to subordinate, if not ignore, practical commercial instruction, in order to give his best energies and time to the curriculum for the London University examination."

Renewed efforts are being made to secure the inclusion of Tamil among the languages recognized by the London University. The Principal of the Jaffna College has written to the External Registrar urging him to give the proposal a trial.

The prize-giving at St. Benedict's Institute, Colombo, was presided over by His Excellency the Papal Delegate, who made a very interesting speech, referring to his own early connection with the schools of the Christian Brothers, and congratulating the Director of St. Benedict's on the progress made during the last eighteen years. This school has now over nine-hundred boys. His Excellency said that a good deal of the irregularity in attendance was due to the fact that parents were not informed when their boys were absent. He suggested that in village schools the schoolmasters should be paid according to a determined average attendance.

Other prize-givings are those at the Prince and Princess of Wales Colleges, in Morahwa, where the new Lieutenant-Governor presided and spoke on the necessity for teaching Singalese and Drawing; and at the C. M. S. Ladies' College, Colombo, where Lady Blake distributed the prizes.

Professor Ponsonby Moore of the Associated Board of the London Royal Academy of Music and the London Royal College of Music examined thirty-six candidates (only one of whom was a male) at the Public Hall. His report was forwarded to Sydney as being the nearest centre, and the results are shortly expected. The Professor expressed himself as very pleased with the marked ability shown. The standard of music in the Colonies was high compared with that of England at the present moment.

MADRAS.

The Full Bench of the High Court has upheld the judgment of the Chief Presidency Magistrate, who convicted a Matriculation candidate of forging the name of the Head Master of his school on a certificate of age. By the by-laws of the University a Matriculation candidate, who can produce a certificate that he is over twenty years of age, is exempt from producing a certificate of attendance and can enter the examination as a private student. The Head Master having refused to send him up for the examination, the student forged the certificate of age in order to gain admittance. Such acts of forgery appear to have become numerous owing to a ruling of the High Court in 1901 that they do not constitute an offence. The new decision will strengthen the hands of the University in its attempts to put down such forgeries.

The Government Review of the Report on Public Instruction enumerates as the main items in the reorganisation of the Department, the appointment of a Deputy Director, the strengthening of the Inspecting Staff by the creation of an Inspector of European and Training Schools and three additional Assistant Inspectors, and the improvement of female education. Primary Education has been assisted by the sanctioning of sixty additional Sub-Assistant Inspectors, so that Primary Examinations may be held *in situ*. The improvement of the training of teachers is under discussion, and the Government express dissatisfaction that private agencies spend large sums on higher education but do little or nothing towards training primary teachers. The increased percentage of attendance in primary schools is noted as a mark of progress and attributed to the more liberal payment of results grants.

The ceremony of opening a High School at Mylapore, in connection with the charities of the late Mr. P. Subramania Iyer, was performed on January 13th by the Hon'ble Sir S. Subramania Iyer, who gave an account of the deceased and said that very large sums were spent by charitable people now-a-days in building rest-houses and temples which might be better utilised in assisting education. The building of rest-houses is certainly less important than formerly, when railways did not exist; but the pious may demur at cutting short the expenditure on temples.

At Masulipatam, on January 21st, Mrs. Parsons, the wife of the Collector opened the Lady Ampthill's Hindu Girls' School, which has been erected largely by the generosity of the Rajah of South Vallur, to commemorate Lady Ampthill's visit. The Rajah was present at the ceremony.

At a meeting of the Council of Native Education, on January 20th, it was resolved to represent to the Director the desirability of the Vernaculars being adopted as media of instruction in non-language subjects in Lower Secondary Classes in schools not intended for Europeans.

The Travancore Government have sanctioned the deputation of two young men to America, Europe, and Japan for instruction in the methods of manual training and technical schools in those countries. On their return, they will be employed in organising schools and training teachers. The scholarships are of the value of £200 per annum, with the addition of travelling expenses. The ground on which this has been resolved is declared to be that education in Middle and High Schools is almost exclusively literary, and, therefore, unsuited for the increasing number of those who wish to follow commercial, industrial, and practical pursuits. It is also observed that the existing system cultivates the memory at the expense of the understanding and that powers of observation, dexterity of hand, and appreciation of magnitude and form receive insufficient attention. Object lessons and drawing would have been cheaper methods of remedying the last defects.

During 1904 the Mysore Government only awarded thirteen of twenty scholarships for technical education. There are twenty-six scholarships available for the current year, which are to be distributed as follows:—Sixteen of Rs. 20 each at the Victoria Jubilee Technical Institute, Bombay; three of Rs. 15 each at the Veterinary College, Madras; five of Rs. 20 each at the Veterinary College, Bombay; and two of Rs. 15 each at the School of Arts, Madras. These scholarships are tenable, in the first instance, for a period of one year only.

PUNJAB.

At a meeting of the Senate of the Punjab University the same question was raised as to the legality of the constitution of the Provisional Syndicate as at Bombay and Calcutta. The method of election, however, was different in the Punjab, for the Syndicate was there elected at a meeting of the full Senate, though the Fellows were divided for purposes of election according to their Faculties. After considerable discussion, therefore, the majority adopted a resolution that in the opinion of the Senate there was no flaw in the election of the Provisional Syndicate, and that if any legal deficiency should be afterwards found, steps should be taken by Government to remedy it in the usual manner.

On December 29th, 1904, Mr. H. W. Orange, the Director-General of Public Instruction, laid the foundation-stone of a Boarding House, attached to the Tanda School in Fyzabad. The Boarding House has been built by the generosity of Talukdar Syad Abu Jafer of Pirpur, and is to be called after the name of Mr. Hose, Deputy Commissioner of Fyzabad.

The Director of Public Instruction in the Punjab has issued orders which will result in a more thorough inspection of indigenous schools by district inspectors and their assistants. The more backward schools among these will be visited as often as possible by the district inspector or his assistant, and they may sometimes have to visit a school once a week for some weeks or spend at least three or four consecutive days in a school.

The Report on Public Instruction has been issued and is considered satisfactory. Progress is marked in institutions for girls—private girls' schools have increased while boys' schools have declined. The total number of schools and scholars and the amount of expenditure has increased. The growing popularity of technical instruction, especially among Mahomedans is noteworthy. In the technical schools the Mahomedans form a large majority. This seems to show that the Mahomedan seeks chiefly instruction of practical use to him in life.

UNITED PROVINCES.

At the first meeting of the re-constituted Senate of Allahabad University, a Provisional Syndicate was elected, consisting of—*Faculty of Arts:* Messrs. Pirie, Thibaut, Aditya Ram, Murray, Cornah, Jones, Sharp, Venis, Westcott, and Amjad Ali; *Faculty of Science:* Messrs. Cox, Ward, and Hill; *Faculty of Law:* Messrs. Aikman and Sunder Lal. It was then decided that Provisional Faculties in Arts, Science, and Law should be constituted by the Vice-Chancellor as nearly as possible in accordance with existing regulations, and that the Board of Studies for the present should remain as now constituted. A Sub-Committee was appointed to draft regulations to be placed before the Senate for approval. The desirability of constituting a Faculty of Medicine and abolishing the Faculty of Engineering was discussed, and a decision postponed.

It has been decided to amalgamate the Philander Smith Institute at Mussoorie with the Oak Openings School, Naini Tal, by transferring the former to the site of the latter at Naini Tal, the united establishments to be called the "Philander Smith College". The two schools belong to the Methodist Episcopal Church, and the object of the amalgamation appears to be to create one first-class school for European children of this sect.

A strong letter of protest, against the proposed transference of Canning College to Badshah Bagh, appears in the *Pioneer Mail.* It is from a Talukdar who argues that the removal will destroy the almost sacred associations which the Talukdars—the "Barons of Oudh"—have formed for the School at which they have been educated.

The Government of India has sanctioned the creation of a graded service for teachers in high normal schools in the Central Provinces. The graded appointments will comprise nine classes, ranging from Rs. 250 to Rs. 30 per mensem, and compensation in the form of personal allowances will be granted to the present incumbents of posts when their pay is temporarily reduced.

Government has also approved of the scheme put forward by the Chief Commissioner of the Central Provinces for the establishment of a Technical Institute at Amraoti to be known as the Victoria Technical Institute and have also approved of an initial grant of Rs. 30,000 towards buildings and equipment; also an annual recurring grant of Rs. 11,000 towards maintenance. The object is partly to train men to work the local cotton gins and presses, and partly to assist in general industrial education in the Central Provinces and Berar.

GENERAL.

The Cobden Essay Prize for 1904 is awarded at Cambridge to Manohar Lal, B. A. of St. John's College. The subject prescribed for the Essay was "The Causes and Effects of Commercial and Industrial Trusts and the extent to which it is possible and desirable to introduce legislative restrictions on their operations."

The Board of Education at Home have condemned the use of the school slate for several reasons—(1) that it is the wrong material for writing upon, the wrong surface and involves the use of the wrong instrument; (2) that it is insanitary and calculated to propagate disease; (3) that it encourages careless and inaccurate habits; (4) that it renders revision of the work of the scholar impossible, and so prevents a record of progress being kept.

GEOGRAPHICAL NOTES.

BY

W. H. ARDEN WOOD, M.A., F.R.G.S.

THE history of any science shows that its development into an organised body of knowledge has been due to the solution of problems which have come naturally to the front at each stage of its growth. Dr. H. R. Mill discusses the present problems of geography in an address delivered to the International Congress of Arts and Sciences at St. Louis in September last, and published in the Geographical Journal for January. In his opinion the chief problem of geography at present is the definition of geography, and after discussing various views as to the scope of geography, that have from time to time been held, he puts forward as his definition of the subject, "Geography is the science which deals with the forms of relief of the Earth's crust, and with the influence which these forms exercise on the distribution of all other phenomena." This definition is justified by the following considerations. The vertical relief of the Earth's crust, determines the division of the Earth's surface into sea and land, and the relief of the sea-bed and the configuration of the coast-lines control the movements of the waters of the ocean. The relief of the land-surface affects the distribution of the atmosphere, the direction and force of the winds being largely dominated by the form of the land over which they blow. Hence the irregular distribution of climate and its innumerable local variations are due to the guiding effect of land forms on the air and water currents. Finally, upon climate, in conjunction with the actual surface conditions in any region, depends the distribution of plants and animals.

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In accordance with this definition of geography, Dr. Mill proceeds to state in order the essentials of a complete geographical description of any given area. These are as follows:—

(1) Configuration: coasts, vertical relief, drainage.

(2) The actual nature of the surface: *e. g.*, the distribution of volcanic rocks, clays, limestones, sandstone and economic minerals.

(3) Climate, as due to latitude, and modified by altitude, exposure, and configuration.

(4) The distribution of wild and cultivated plants in relation to their physical environment, and of the industries which depend upon them, and upon other natural resources.

All these are factors controlling the distribution of population and will serve to explain it; whether the population be scattered more or less thinly over a pastoral or agricultural region, or concentrated over a mineral-producing and consequently industrial region, or collected in towns whose origin may be due to causes, still effective, or to causes which have ceased to operate.

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Attention has recently been much focussed upon geography as an educational subject, owing to articles in the *Times*, followed by a correspondence, which appeared during November, and to a further correspondence which appeared in the columns of the *Daily Mail* in January, in consequence of Mr. Arnold Forster's reflections upon the efficiency of English Public Schools.

The point of the *Times* articles was that geography was neglected in the higher education of the country. "How could knowledge or interest in such matters be expected as long as they are considered of no account in our educational system? It is not possible to deal rationally with military history or strategy, past and present, without knowledge of geography and of theatres of war, and without maps. Yet the systematic study of these branches of learning has been rigorously excluded from the programmes of our military colleges and universities, and remains excluded to the present hour. . . . . . We have suffered, and we shall continue to suffer, in the conduct of military operations, because the teaching of geography has not assumed its proper place in national education, and because the learning of it is not widespread. The interest of the army in this matter is solid with politics, commerce, and finance. . . . . . On all sides the neglect of geography leaves a trail of harm. It gives us constant friction in our international relations, and not infrequent wars; it leads our business houses into costly mistakes, and into sins of omission and commission; it does as much as anything else to permit immoral financiers to drain the capital of England by nefarious schemes; it leads to reckless writing in the press, and to the isolation of England in a hostile world."

The correspondence which followed was chiefly directed to shewing that the Universities were not unmindful of their responsibilities in the matter, and had done much, and hoped to do more to recognise the importance of the scientific study of geography. But there can be no doubt that the efforts of the universities have been made under the disadvantage of want of sufficient means, and in view of the importance of the matter in connection with military education, the Government might not unreasonably be expected to follow the lead of the Royal Geographical Society, and contribute financial aid.

Several Head Masters of the great Public Schools replied to Mr Arnold Forster's strictures. They pointed out, not unreasonably, that the study of geography could hardly be dealt with as its importance demanded so long as the War Office, in the examinations for admission to Sandhurst and Woolwich, rewarded a knowledge of the subject so illiberally. Boys and their masters are, after all, human beings, and most attention will inevitably be given to those subjects which are most likely to secure success. The number of marks allotted to geography in the entrance examination for Sandhurst is only 500, whereas there is no other subject on the list which receives less than 1,000. As the Head Master of Rugby said, "The preparation is dictated by the schedule of examination, and the marks assigned to each subject. It is a bad system, for it compels teachers and taught to work for marks, a condition which makes good education difficult ; but possibly it is an inevitable system. The natural result is that the attention paid to any one subject is largely in proportion to the value assigned to it in the schedule."

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Dr. Livingstone, the discoverer of the famous Victoria falls of the Zambezi, propounded a theory in explanation of them which has hitherto been accepted as satisfactory. This was that the falls "are simply caused by a crack made in a hard basaltic rock from the right to the left bank of the Zambezi." The river falls into this fissure, escapes from it by a gorge not more than 100 feet in width, and flows away through a zig-zag cañon forty miles in length. Mr. A. J. C. Molyneux has now come forward with another theory, arrived at after a careful study of the falls themselves and the surrounding region. He claims that the falls as they now are, like Niagara and most other falls, are simply the result of river corosion. The central basin of the Zambezi has a thick sheet of volcanic rocks over the edge of which the river drops some 400 feet at the Victoria falls, and through which the cañon below the falls has been cut. Mr. Molyneux's theory is that "the cañon, gorge, chasm, and falls are due to the ever-reducing action of moving water, eating back with relentless energy, year by year and age after age, into the hard and stubborn wall of igneous rock." The difficulties to be overcome in establishing this theory are the explanation of the chasm and the zig-zags of the cañon below the falls, and Mr. Molyneux sets himself to do this in the paper which he has published in the Geographical Journal. He claims that the cutting down of the chasm is solely due "to the continuous thrust of the rushing water among the joints of the basalt," and that the zig-zags are due to the control over the eroding forces exerted by the islands of hard rock which must have studded the river in the past as they do now, and the lines of weakness in the basalt along what may be called the master joints or faults. The falls have worked their way transversely along these lines of weakness, have then broken their way back to another line of weakness, and followed that in the opposite direction. Thus the actual working point of the river at any period has been the chasm it was ever enlarging, and the zig-zags are the deserted chasms below the present falls.

SCIENCE NOTES.

BY

WILLIAM JESSE, M.A., F.Z.S.

IN November last the Imperial Commission of Consumption experts, appointed by the German Government to investigate the relations between bovine and human tuberculosis bacilli, held an important meeting, when Doctor Weber, an eminent physician, reported on the work already accomplished by the Committee. Investigations conducted up to the present seem to show that the two bacilli are biologically absolutely distinct, and do not develop or change into one another. Up to the date of the meeting the bodies of fifty-six persons who had died from consumption had been examined by the members, and in fifty of these the human bacillus alone could be found. The bovine variety was, however, discovered in the remaining six cases, and as three were children, it is not improbable that they received the germs from the milk of a diseased cow.

Two other cases, regarded by Dr. Weber as most important, showed bovine bacilli in the gland, and human bacilli in all other portions of the body, and were distinct instances of double infection. Another very important case of tuberculosis of the lung showed the diseased organ to contain both bovine and human bacilli.

The conclusion, so far arrived at by the Committee, is that tuberculosis in human beings is almost entirely due to infection by the human bacillus, but that, while the danger from bovine bacilli seems slight, it is necessary to use every available means to secure ourselves against any risk of contamination.

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An appeal is being circulated by Sir Francis Laking, Sir Frederick Treves, and others on behalf of an international memorial to Professor Finsen, the discoverer of the lupus cure. The efforts of this great doctor terminated almost simultaneously in his success and his death. He knew that he was a dying man, but, with unflinching courage, he spent every available hour of what life yet remained to find the cure for that terrible disease, lupus, which for centuries had scourged humanity and defied medical science. In the last year of his life he was awarded the Nobel prize, but, poor though he was, he refused to take more than a tiny portion of the money, devoting the remainder to his institute.

Professor Finsen was a Dane of Copenhagen, and his work naturally received the support and sympathy of Queen Alexandra, who herself presented a complete set of lamps, etc., to the London Hospital, and has now given £100 towards the proposed memorial.

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An instrument likely to prove of increasing use is the photophone. Graham Bell, the original inventor, designed the instrument to make use of the remarkable property, possessed by selenium of having its resistance to the passage of the electric current reduced by light falling upon it. A small mirror formed the transmitter, upon which a strong beam of light was thrown. The receiver was another mirror which reflected the light on a selenium cell in circuit with a telephone and battery. The message being spoken into the transmitter, the mirror was set in vibration, causing a variation in the intensity of light thrown on the selenium. By this method a rapid fluctuation of the current was produced, which gave rise to corresponding sounds in the telephone. Professor Ruhmer of Berlin found that, by increasing the size of the mirror, the effectiveness of the instrument was largely increased. With a four-foot diameter, messages can be sent about nine miles. The German Government, in anticipation of the advantages which an improved photophone might possess, particularly in naval and military manœuvres, has granted the Professor a considerable sum of money in order to continue his experiments and investigations.

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The new comet, the discovery of which M. Giacobinin announced on December 21st, is said to have an orbit very different from those of its two immediate predecessors, the periodic comets of Encke and Tempel. In technical terms the elements of its orbit are expressed as follows:—Perihelion passage 1905, January 3·28; longitude of perihelion 300 deg. 11 min.; longitude of ascending node 225 deg. 1 min.; inclination 103 deg. 27 min.; perihelion distance 1·87. These elements involve that the comet has been coming up from the southern side of the earth's orbit to the northern, that its orbit is inclined at a great angle to the ecliptic (some 76½ degrees in fact), and that it is moving in a retrograde direction.

These last two facts seem to show that the comet is not a part of our solar system, and' is unlikely to be seen again. Though its perihelion from the sun is great, it is less than that of some other recently-discovered comets, that discovered last April by Professor Brooks in particular. Even as it is, however, it lies far outside the orbit of Mars, and at its nearest is at least 180 millions of miles from our own planet. It is slightly increasing in brightness at present, but in astronomical language will never rise much above tenth magnitude. The course it appears to be taking at the present moment is removing it from the vicinity of Zeta Herculis, and on the 7th of January it was in conjunction with the star known as Pi Herculis.

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Another discovery of interest to astronomers is the recently-reported finding of a sixth moon revolving round the planet Jupiter. Mr. Perrine, of the Lick Observatory in America, has the honour of being its discoverer. Its brightness is said to be equal to that of a star of the fourteenth magnitude, and its distance from Jupiter is estimated at forty-five minutes.

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Wild animals, it is well known, possess to a remarkable extent the power of foretelling the weather. The movements of wild fowl often give notice of an approaching change. When thunder is brewing, animals get very restless; sheep and cattle seek the more sheltered parts of the field when a storm is imminent, and in those countries where vast prairie and forest fires are imminent, animals, wild and tame, scent the danger long before man is aware of it. According to M. Behn, in a note to the Académie des Sciences, Paris, a sand-worm of the French coasts of the English Channel and Atlantic, known to naturalists as "convoluta," seems to have some idea of time. At low water it makes green spots upon the sand, but disappears as soon as the tide begins to turn. Strange to say, it was found to go through similar manœuvres during the fourteen days in which it was under observation in an aquarium.

CORRESPONDENCE.

EDUCATION IN PHILOSOPHY.

SIR,

PROFESSOR RANDLE has, in the article published in your February number, criticised severely the course of philosophical instruction in the Bombay University. With the opening paragraphs of his paper no one, I think, will quarrel. He merely repeats the old saying of Kant: "You cannot teach men philosophy, you can only teach them to philosophize."

But Mr. Randle's main thesis is, I think, more disputable. It is that the examiner is the master of the teacher, and that, as examiners in this country do not examine wisely, a bad system of instruction necessarily results. I am afraid that Mr. Randle has carried away with him depressing recollections of his work as an Indian Professor. I regret this very much, but I think that a longer experience would have brought him a greater sense of freedom.

I am willing to allow that questions are, as a rule, strictly limited to text-books, but I can only say that I lecture without any reference whatever to the character of the examination. Of course, when the subject is Kant, I do my best to make Kant's point of view quite clear, but I never do this without referring to Kant's historical antecedents, without indicating any weaknesses or inconsistencies in his point of view, without considering the relation of his view to the views of others, without considering the different directions in which his views have been developed, and without some consideration of the bearing of his writings on present-day opinion and modes of thinking. Especially I make a point of criticising Mill from the Kantian point of view, or *vice versâ*. All this makes men think, and as at the same time I suggest books or portions of books to be read, I succeed in this way also in carrying the student beyond his text-book. Professor Randle would say that the student will neglect all this because he knows that it will not pay. But that is not my experience. Some of course will neglect it. But the best students do not. I find that, when they are once brought to see that philosophical problems are really inevitable problems to rational beings, and that they have a direct bearing on the great interests of life, they really do become interested in them for their own sake, they do delight in the exercise of thought, and that they are eager to read the books which are recommended. Nor do they really suffer as candidates for examination. They have learnt, if I may so put it, Kant and something more. The Kant is all of which they have to show knowledge. But they can show knowledge of that, and the something more is still with them. It would be more satisfactory if examiners took a larger view, but the narrowness of their view does not necessarily prevent the teacher from enlarging his pupils' view. It is probably true that a man may pass the examination who has never really thought at all, but that does not mean that a Professor cannot teach his best men to think. It must also be remembered that the fact of the pupil having no choice of teachers tends to make the one teacher available the master of the situation. If there were some one who could open a lecture-room next to mine and say: "I will cram you for the examination. I will teach Kant, the whole of Kant, and nothing but Kant," he might draw off many of my pupils. But this is not the case. They must come to me, and they must be content with my way of dealing with a subject. Probably Mr. Randle had not many opportunities of discussing the matter with other teachers. Also he was not here long enough to learn the extent of his power over students, especially the best students. These considerations will, I think, largely account for the unduly gloomy view which he takes of the situation. If I am right, it is not necessary to add a general paper limited by the indications of a general syllabus, because there is no reason why general questions should not enter into papers set on a particular author. You would not prevent cramming simply by a syllabus. Men would still be found who would merely learn by heart what the Professor said. I have no objection to a general paper, but unless it can be shown to be really necessary in the interests of sound learning, it is not desirable to add anything to the existing papers.

Of the four books prescribed for the B. A. degree, Mr. Randle is satisfied with three. It is, therefore, unnecessary to make any remarks upon them. I agree with him that Martineau is not a satisfactory book. It was chosen partly because Martineau's own way of thinking commends itself to many Hindus, but mainly because no one could suggest a better book. It was thought desirable to acquaint students with typical or representative ways of explaining the facts of the moral consciousness, and this was the only book that suggested itself. It is not necessary to agree with

Martineau. He gives the lecturer a starting point from which to discuss the subject. There would probably be no difficulty in replacing Martineau by a better book if one was suggested. It is obviously desirable that a student should know and have thought about the most important types of ethical theory.

With regard to the M. A. examination there are certain special subjects prescribed, and I think that the two papers on the History of Philosophy might be made general papers, that is to say, they might deal with the position, importance, and relation of philosophers in the history of thought, and might require an appreciation of the general contribution made by any one of them to the great problems of thought and life. In a course of two years' lectures I have not found it impossible to deal with the history of philosophy in this way. I am sometimes able to get assistance from other Professors in particular books, but it is not desirable, I think, that an M. A. student should depend entirely on lectures. With a little guidance and direction he should, for part of his work at least, be made to rely upon himself. I would not confine philosophical study to M. A. students, because so few can afford to proceed to that degree. We do not force it on any one now, and it has been my object to show that many at least of those who elect to follow it at present profit by it. The question at issue between Mr. Randle and myself is not one that can be settled dogmatically. At the risk of appearing egotistical I have given my own experience. I do not pretend that our system is perfect, but I feel that a larger treatment of philosophical problems than is required to satisfy examiners is not only a possibility but an actuality, that it does no harm even to those who only wish to pass, that it benefits the more intelligent class of pupils, and that there are always some who welcome it. There are to my knowledge other Professors who like myself lecture without any fear of the examiner before their eyes, and yet find their lecture-room full and meet with no reproaches from their pupils.

Yours, &c.,

F. G· S.

THE BOMBAY CURRICULUM.

SIR,

I HAVE read, with amusement, some observations of Mr. Alston on the Bombay Curriculum in your magazine, and also in *East and West*. Mr. Alston will, I hope, forgive me for saying that one of the elements in this difficult problem is the character of the Indian student, a thing requiring for a due estimate of its importance an experience much larger than that of Mr. Alston. To demand magnificently "subjects" and not "books" is very specious, and very easy. The real question is, how would the thing work out, given the human material such as it is out here.

With your permission, I will follow Mr. Alston into some of his details.

Mr. Alston has a low opinion of Merivale. So have I, and so have we all. But until recently, it was the only book available. Since Mr. Bury's book has appeared, I have always used it with my students, indicating to them also other available books. Mr. Alston seems to suppose that because Mr. Bury's book is not mentioned, it is ignored. Mommsen's *Provinces* is, in my opinion, not well suited to the needs of students.

Mr. Alston does not admire Fawcett. I have much pleasure in informing him that for twelve years I have taken care to explain analytically to large classes that almost every page of Fawcett is erroneous. Yet I have thought it best to let it stand, and for two reasons. In the first place, what shall replace it? There is only one good short manual of the subject in the English language, that by Mr. Devas, but it is a Catholic manual and might give offence in some quarters. I have always strongly recommended it to my classes. In the next place, whatever we may think of Fawcett and his friends, we must remember that their views were till very recently generally held in England. Bad political economy, as Sir Henry Maine said, may be very instructive history. No man knows the nineteenth century, who does not know what its economic views were, for they are its essence.

Similarly with Adam Smith. Wrong as he was, his book originated everything in England. Nor do I consider it so difficult a matter as Mr. Alston seems to do, to master those sections which are recommended.

Mr. Alston speaks with bated breath of Professor Marshall, and is horrified to find his works omitted from the M. A. Curriculum. This is an enormity altogether too dreadful. Well, I will take the whole *onus* of this enormity on my own shoulders. I was directly responsible for the omission. I do not share Mr. Alston's opinion of the value of Professor Marshall's works, (a point which it would obviously be inappropriate to discuss here), nor do I share another of his opinions, that every book and every system is *better*, in the exact proportion in which it is newer. Cambridge is duly represented by Cunningham.

But I will not pursue these details further. Let me, to be brief, tell Mr. Alston my view. Provided that a book, or books, covering the field and raising all the essential questions, is appointed in any subject, I think that the books are a very minor consideration. The really important thing is the man who expounds them. If Mr. Alston can reveal to the University some scheme which will enable it always to secure the best men, he will deserve well of it: *but that is hard*. Education, like everything else in India, is a question not of books but of men. This is just Mr. Alston's mistake. Much of his quarrel is with examiners' questions, but I can assure him that this trouble was obvious to everybody even without his assistance. Everybody understands and deplores the difficulty of getting examiners that know their business.

To Mr. Alston, the combination of History and Political Economy "*savours of comic opera*." This incautious opinion enables us to judge of the general value of his criticism. To me, nothing appears more tragic than the condition to which Political Economy has been reduced by economists ignorant of history. Divorced from history, Political Economy has sunk into abstract futility and idle theoretic frivolities. No man deserves consideration as an Economist who is not also a historian. And when we find, further, that if Mr. Alston had his way, the unfortunate student would be wasting his time over that most laughable of all modern delusions, *Elementary* Politics, we know where we are, and can afford to receive Mr. Alston's denunciations with a smile.

I am, Sir,
Your obedient servant,
F. W. BAIN.

REVIEWS OF BOOKS.

(1) ALGEBRAICAL PROBLEMS, GRADUATED AND CLASSIFIED. *By K. R. Nanjiani, B.A.*

(2) EUCLID'S ELEMENTS OF GEOMETRY, BOOK I. *By B. Atma Ram, B.A.*

(3) LONGMANS' SENIOR ARITHMETIC. *By T. F. G. Dexter, B.A., B.Sc., and A. H. Garlick, B.A.* (LONGMANS GREEN & Co. 4*s.* 6*d.*)

(4) A NEW GEOMETRY FOR SENIOR FORMS. *By S. Barnard, M.A., and J. M. Child, B.A.*

(1) This is a useless book. It contains some one hundred problems in Elementary Algebra, showing how to solve many examples in arithmetic by algebraical methods. There is neither ingenuity nor novelty in the methods used. Similar examples are solved in every book on Algebra. On page 17 the author claims, as a discovery, the method of solving the simplest indeterminate equations. Apparently the author has never heard of these under this name.

(2) This edition of Euclid's first book is a very good compilation. The observations given under each proposition are very instructive, and should be useful to teachers in explaining the propositions to the students. There is, of course, no novelty in them, many of them being expressly quoted from other authors, and most of the others also appearing to be old friends. Students of twelve or thirteen will not understand *petitio principii* of which the author speaks on page 29; and, in fact, many of the remarks are above the heads of the students. No symbols are used in the text, which we regard as a mistake. We have the usual note on the seventh proposition, that it is useless if the eighth proposition be proved in a different way. The author, with almost all others, fails to see that the proposition involves the important fact of the rigidity of a triangle, as has been well observed by "Lewis Carrol" in his *Euclid and his Modern Rivals*. Several well-known theorems on the first book should have been given and proved in an appendix. They are here inserted only among the exercises, without special attention being called to them. Although the book has many merits, good print is not one of the number. We think, lastly, that in the modern tendency to improve the teaching of geometry Euclid has no chance, and new editions of the elements are almost out of date.

(3) This book has had a fairly good reputation, and we may say at once that it deserves it. It contains all the points that one looks for in such compilations, in particular a very good set of exercises. They are in fact too numerous and too hard, and will, therefore, require on the part of the teacher a good judgment in selection. In the theoretical part the proofs of many of the rules are given and symbols are freely used. Vulgar fractions come before decimals—an order which is now-a-days regarded as out of date. The chapter on the application of algebra to arithmetic raised great hopes in us, and we were disappointed. The applications given there are trivial, and it is our firm opinion that the present-day divorce of arithmetic from algebra is far too complete. They ought to be regarded as sister sciences, and each ought to help the other. The authors will find valuable hints in Cautor's *Politische Arithmetik* in re-writing their chapters on the commercial uses of arithmetic. Also as to the purely theoretical portions dealing with properties of numbers, etc., it is curious

to see the difference between the book under review and a book very popular in France and written by a master, *viz.*, Tannery's *Leçons d'Arithmetique*. On the whole, taking it all in all, we consider the book as an advance on English text-books on the subject.

(4) Messrs. Barnard and Child's books on geometry have already made great headway in the strong competition for popular favour among text-books on geometry to suit modern requirements. The geometry for junior forms had already been published, and it was to be expected that the complementary portion should be published soon. It is a book deserving of all the recommendation that we can give to it.

R. P. PARANJPYE.

THE STORY OF THE BRITISH EMPIRE FOR CHILDREN.

By Francis M. Anderson. (METHUEN & CO. 2s.)

THIS book was written originally to instruct and amuse a little boy and does not pretend to be a school text-book. It is quite as instructive and far more interesting than most school books. It is divided into two parts—the first of which is intended for very small children, and gives a very slight description of the chief possessions of England in a very simple but bright way; the second part goes over the same ground, but at greater length and with more detail, devoting more space to the history of each colony. The writer seems to have made a very good selection of facts, and to have told his history in a way which will hold the interest of children. The maps and illustrations are numerous, and the latter for the most part clear. The book seems to us peculiarly suited for teaching children at home, and probably many children would welcome it in place of the usual tale of fiction.

ENGLISH LITERATURE: A NEW HISTORY AND SURVEY.

By J. M. D. Meiklejohn. (MEIKLEJOHN AND HOLDEN. 6s.)

THIS ought to prove a very popular manual. It is a handsomely bound book of 650 pages of large open type, varied with footnotes and extracts in smaller type, so that the author has sufficient space to accomplish his purpose of writing a "brief, plain, and not unattractive introduction to English Literature" from the earliest to the present times. In such a book there are two main difficulties—to assign a due proportion of space to the different writers and ages and to keep always before the reader the process of development, so that he may not lose himself in the multitude of writers. On the former score we have small complaint. Perhaps the mediæval Scottish poets have a little more space than is their due, but English historians, on the other hand, usually under-rate their importance. Burns and Scott occupy slightly more room than Wordsworth, Byron, and Shelley, which the first-named, we think, hardly deserves. On the other hand, we do think that more space might have been devoted at the beginnings of each chapter to the general features of the period and the lines of development. The defect is noticeable especially in the Elizabethan period, the characteristics of which and the causes which gave birth to such a large mass of such exceptional literature are not summed up. This much said, we are free to admire the manner in which the facts are selected, and the concise, simple, but interesting narrative. Considering the narrow limits of space, the history contains a wonderful number of extracts, chosen with great judgment and rendered easily intelligible by occasional footnotes. Mr. Meiklejohn quotes largely from the criticism of the best authorities. His own verdicts display no great novelty or brilliance, but are sensible, moderate, and orthodox, qualities eminently desirable in a student's manual. The proportion, too, of criticism to biography and description seems right. In short, this History seems a very safe and convenient text-book for use in either schools or colleges.

POEMS AND SONNETS FROM WORDSWORTH, PRECEDED BY LOWELL'S ESSAY ON WORDSWORTH.

Edited by H. B. Cotterill. (MACMILLAN & Co. 2*s.* 6*d.*)

MR. COTTERILL has spared no pains to make his notes as representative as possible, though we think that no critical notes on the sonnets of such a poet are complete without a notice of the ideals and history of the sonnet. Any student will do well to begin his study of Wordsworth with this book to guide him. We note with some regret the method of quoting parallel passages. They are taken much too exclusively from Wordsworth himself. If the editor had laid under contribution poets of such distinctive individuality as Shelley, Keats, Byron, and Tennyson he would have encouraged independent reading without over-feeding the student with a superfluity of kindred sentiments.

BYRON: SELECTED POETRY. *Edited by J. Wight Duff.*

(W. BLACKWOOD & SONS. 3*s.* 6*d.*)

A POET of Byron's facile productivity and unequal quality lends himself admirably to selection, and when he is guilty of such sins against decency and good taste as Byron was, and yet has left such noble expressions of deep passion and soaring thought as none can study without profit, an anthology becomes a necessity. There is, perhaps, no character or poetry whose study is more stimulating. His complex nature, full of startling inconsistencies and contrasts, and his poetry, so rebellious against the conventions of life and literature, are likely to be even more provocative of thought and interest than the placid life and reflective poetry of Wordsworth, however strong the current of the latter's life below the surface, and however novel his poetry at its first appearance. The turbulent variety of Byron's life and the intensely personal character of his poems render some kind of commentary necessary for the student, and so we hold an annotated book of selections justified. Mr. Duff has made an excellent selection, which comprises within 300 pages of good type all that is best in Byron's work, and even the originals of his translations. The shorter poems are given complete, from the longer very large portions are extracted, and the extracts are rendered intelligible by summaries of the whole. The Introduction of sixty-five pages, including a short biography, is a very complete and judicious piece of work. Mr. Duff has obviously read all the best authorities, but gives his own views which are prompted by a discriminating admiration. His account of Byron's relations to his times and of his attitude to Nature is good. The notes display wide reading admirably used for illustration, and are refreshingly short and always to the point.

CONCISE LATIN COURSE. *By E. C. Marchant and J. G. Spencer.*

(GEORGE BELL & SONS. 2*s.*)

AN alteration of Bell's Latin Course so as to make the rate of progress quicker. Aiming at "leading the beginner from the known to the unknown, from the concrete to the abstract," the rules *follow* the exercise. There are three other novelties in the arrangements, which appear decided improvements. The exercises are usually interesting and amusing, for the sentences are coherent, and will appeal to boys' love of history and fiction and their sense of humour: the Latin-English and English-Latin sections are strictly parallel: and each exercise is followed by some Latin mottoes and proverbs with their English equivalents. There are full vocabularies and indices.

We have received from Messrs. F. E. Becker and Co., of 33, Hatton Wall, London, (1) an advance copy of their New Physical Apparatus List, containing some 630 pages and over 4,000 clear illustrations. It certainly justifies their claim that it is the largest and most up-to-date English catalogue, and its excellent arrangement should make it of very great assistance to all teachers of physical science. (2) A book of gummed labels (price 1*s.* 2*d.*) for bottles, cupboards, etc., in the Chemical Laboratory. The labels have been arranged by Professor G. E. Cory so as to supply a large number of those most in use and most often needing renewal, and so as to provide for most of the usual combinations in the names of compounds. The pages are interleaved with oiled paper, so that the damp of the Indian climate does not cause them to stick together.

BOOKS RECEIVED.

Macmillan's New Globe Readers, Primer II, 5*d.*
Clive's Shilling Arithmetic. By W. Briggs. (*University Tutorial Press.*)
Bell's Concise Latin Course. By E. C. Marchant and J. G. Spencer. (*G. Bell & Sons.* 2s.)
An Introduction to the Calculus. By G. A. Gibson. (*Macmillan & Co.* 3*s.* 6*d.*)
Technics. November and December, 1904. (*G. Newnes.* 9*d. net, each.*)
Illustrated Catalogue of Physical Apparatus sold by F. E. Becker & Co.
Mechanics Applied to Engineering. By J. Goodman. (*Longmans, Green & Co.* 9*d. net.*)
Practical Electricity and Magnetism. By J. Henderson. (*Longmans, Green & Co.* 7*s.* 6*d.*)
Object Lessons in Elementary Science, Stage III. By Vincent Murché. *Macmillan & Co.* 2*s.*)
Chemical Statics and Dynamics. By J. W. Mellor. (*Longmans, Green & Co.* 6s.)
La Fée Grignotte and La Cuisine au Salon. Edited by J. G. Anderson. (*Edward Arnold, 9d.*)
The Principles of Education. By T. Raymont. (*Longmans, Green & Co.* 4*s.* 6*d.*)
Prospectus of Christmas Vacation Classes, Saidapet (Madras).
Notable Utterances at the National Gatherings, 1904. (*Natesan & Co., Madras,* 8 as.)
German Readers for Technical Schools. By Ewald F. Seckler. (*W. Blackwood & Sons.* 2*s.*)
Key to Tamil Hand-book. By G. U. Pope. (*Clarendon Press.* 5*s. net.*)
The Early History of India. By Vincent A. Smith. (*Henry Frowde.* 14*s. net.*)
Elementary Algebra. By W. M. Baker and A. A. Bourne. 4*s.* 6*d.* Part II., 2s. 6d. (*George Bell & Sons.*)
Elementary Schools. By W. F. Norris. (*Longmans. Green & Co.* 2*s.* 6*d. net.*)
The Empire of India. By G. Shiva Rau. (*Madras. Re.* 1-4.)
Technological and Scientific Dictionary. Part VII. (*G. Newnes.* 1*s. net.*)
Atlas of the World's Chief Industries. (*G. Philip & Sons.* 2*s.*)
Time Around the World. Patented by Edward Cowell. (*George Philip & Son.* 6*d. net.*)

OUR CONTEMPORARIES.

IN *The School World* Mr. Laurie Magnus begins an article on the study of Tennyson's poems. He urges the teacher to begin by impressing on the class that "it should be a point of honour with us all to rise to our opportunities," and that, therefore, we must not neglect the great heritage of English literature which has come down to us. The value of a study of poetry is to be the teacher's next point, in explaining which he is to explain the relation of poetry to real life. Mr. Magnus suggests points for a discourse on this subject and refers the teacher to Mathew Arnold's essays on "The Study of Poetry" and "Wordsworth"; W. J. Courthope's "Life in Poetry, Law in Taste"; Canon Beeching's "Two Lectures Introductory to the Study of Poetry"; C. T. Winchester's "Some Principles of Literary Criticism" (New York, Macmillan); and to his own "Introduction to Poetry." We mention these references as they may be useful to our readers. Mr. Magnus then goes on to characterise the age in which Tennyson lived. We shall continue to reproduce the heads of his articles as they appear for the benefit of those who are teaching Tennyson in India.

The same magazine contains a list of "The most notable school-books of 1904." Here is the list of books on English language, grammar and composition, with the compiler's notes.

(1) *The Making of English*, by H. Bradley. (Macmillan, 4*s*. 6*d*.)
"A most attractive and suggestive treatise, for teachers quite indispensable. Senior pupils may also profit by it."

(2) *Advanced English Syntax*, by G. C. T. Onions. (Sonnenschein 2*s*. 6 *d*.). "For seniors."

(3) *Elements of English Composition*, by T. F. Huntington, (Macmillan, 3*s*. 6*d*.)
"Perhaps more for teachers than for pupils. Should prove a trustworthy guide and provide suitable material."

(4) *The King's English and How to Write It*, by J. Bygott and A. J. L. Jones. (Jarrold, 1*s*. 6*d*.)

(5) *Style in Composition*, by W. J. Addis, (Allman, 2*s*.) This and No. 4 are "adapted for London Matric., Civil Service, and similar examinations."

(6) *Composition for Schools and Colleges*, by C. H. Maxwell. (Meiklejohn and Holden, 1[illegible])
"Very good outlines of a hundred essays, which the judicious teacher will find helpful."

(7) *Magnus's English Course*, *Book I.*, *Words and Their Uses*, by Laurie Magnus. (Routledge, 10*d*.)
"For juniors, clear and practical. Very good exercises."

(8) *Every-day English*, by J. S. Rankin. (Educational Publishing Company: Book I., 2*s*.; Book II., 2*s*. 6*d*.)
"An attempt to teach English without direct reference to grammar."

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In the *Journal of Education* Mr. Cloudesley Brereton begins a comparison of English and French secondary schools which is on the whole in favour of the French. In France all State schools, whether *lycées* or *collèges*, are in close and intimate connection with the Ministry. In England the great endowed schools are managed entirely by their own governors; the lesser receive grants from the Central or Local Authority or both, and are more or less controlled by them. French control secures qualified teachers and a uniformly high standard of efficiency; English independence saves education from excessive uniformity and allows more room for experiments. The French headmaster has small power of initiative or control; the English "is often a veritable *pontifex maximus*," absolute over his assistants and pupils alike. The French system of dividing the functions of the teacher between the professor who does the teaching and the usher who looks after play and preparation creates culture and highly efficient teachers, but the English plan of combining both functions in one teacher gives him more power in the training of will and character. The French teacher has a uniformly higher pay, more security of tenure, less work, and consequently a higher social position. He is, perhaps, too much of a specialist, while the English form master is expected to teach too great a variety of subjects. The work and classes of a French school are carefully graduated, so that a boy's promotion is uniform and yearly. In England the arrangement of classes is very various and a boy's promotion may be meteoric or unduly retarded, which is good for able boys but bad for the dull, who need a carefully graded course.

Mr. Brereton's comparison of the two countries in the matter of examination is interesting. French regularity of programme, efficient staffing, and inspectorate render all external examinations, except at the end, superfluous. The English boy is harrassed with examinations because—firstly, the public demands some test of the school's work which is only obtainable by external examination; secondly, because the headmaster requires to know something of the work of assistants whose class-rooms he seldom visits; and thirdly, because there is as yet no single leaving certificate examination in England, but a multitude of bodies with special entrance examinations. Examinations, too, are, according to Mr. Brereton, conducted in France on a better system. In England, the examination is an audit of knowledge. "The pupil who can disgorge the greatest quantity of facts in a given time comes out top. Questions of style (except in Latin or Greek prose), of composition (in the large sense of the word) are of secondary consideration; whereas, if I understand the French system aright, it is just these very *constructive* qualities to which most value is attached . . . . The English examinee writes on the assumption that he is writing for one who knows what he ought to say and only wants to verify his facts. The French examinee writes from the point of view of one who wants to explain to the ordinary cultured person what he has to say." Mr. Brereton thinks the French system more valuable for real life as it breeds the original designer instead of the mere copyist. There is an obvious danger in it that facts will be disregarded for style, but the English system undoubtedly pays too little attention to the form of knowledge. In a German School no answer is accepted unless it is given in *correct form.* For a similar reason, Mr. Brereton defends the French use of oral examination, and asks why any allowance should be made for nerves in the examination room when **they** are never made in real life. "The batsman who gets out from funk has no second chance." This would be a valid defence if presence of mind were the only faculty to be tested by an oral examination. Moreover, the batsman has a second innings before the match is over.

* * * *

The same journal has an amusing article to illustrate the humours of the school-room. It is, says the writer, the greater power of imagination of youth which begets the 'originality,' of the school-boy. "The great question 'What is truth?' had taxed the minds of such men as Pythagoras, Aristotle, Aquinas, and had remained still shrouded in mystery until it was brought into contact with the mind of a youthful philosopher of our own day. 'Truth', we now know, 'is the owning up to a thing when you are found out.'" The Agrarian Laws of Rome were explained by one youth as "formed by some Roman or other that no woman was to drive about Rome in an open chariot unless she was going to church." The Licinian Laws, according to another, who had evidently decided views on education, were passed "that no school-boy was to be killed or thrashed in school without his own consent." The path of least resistance is a fundamental law with them. *Integer equus* to one was nothing else than 'an equal number'; and when remonstrated with, the boy unblushingly made answer: *Integer* means 'a number' and *equus* means 'equal.'" It was certainly a stroke of genius, which, since *es* comes from the verb *sum*, made the noun *pes* come from the verb *pum pes, pet, pumus, pestis, punt.* The boy who said that exaggerated the debt of English to Latin. Another, who studied modern drama with more zeal than discretion, enumerated, as the chief plays of Shakespeare, "Macbeth,' 'Quo Vadis,' 'Sign of the Cross,' 'Mikado,' and 'San Toy.' The explanation of a 'widow' as a 'she-bachelor' was ingenious; that of the *knout* as a vulgar word commonly used in Lancashire and meaning 'nothing' must have come from a rather confused student of dialect.

GOVERNMENT NOTIFICATIONS.

PERMANENT NOTIFICATION.

No. 3197 of 1902-03.

Poona: Office of the
Director of Public Instruction,
18th July 1902.

INDIAN EDUCATION.

The Educational Department is not responsible for anything which may appear in this publication, unless over official signature.

F. G. SELBY,
Acting Director of Public Instruction.

NOTIFICATION.

The undermentioned work is recommended for prizes and libraries in Arts Colleges of the Bombay Presidency:—

"The Chatus-Sutri" (चतु: सूत्री) from Shrimat Ramanujacharya's Shribhashya by Pandit Vasudeo Shastri Abhyankar, Fergusson College, Poona. Price Rs. 2.

Poona: Office of the
Director of Public Intruction,
6th February 1905.

J. G. COVERNTON
for *Director of Public Intruction.*

NOTIFICATION.

The undermentioned work is recommended for the Libraries of Colleges and Secondary Schools in the Bombay Presidency and is suitable as a prize book.

"Useful Instruction," Volumes I. to III., by Motilal M. Munshi. Price, Rs. 7 for a set of the 3 Volumes; and of each Volume, Rs. 3.

Poona: Office of the
Director of Public Instruction,
15th February 1905.

J. G. COVERNTON,
for *Director of Public Instruction.*

List of appointments, etc., in the Educational Department, from 11th January to the 10th of February 1905.

APPOINTMENTS MADE BY GOVERNMENT.

11th January 1905.—Mr. Premchand Avatrai Jhangian, B.A., is appointed to be Deputy Educational Inspector, Sukkur, *vice* Mr. Chaturbhuj L. Ojha, deceased, continuing to be on deputation with the Text-books Revision Committee.

18th January 1905.—Mr. Ganesh Janardan Agashe, B.A., Curator Government Central Book Depôt, Bombay, and late Acting Educational Inspector, Southern Division, is granted seven days' extension of the privilege leave sanctioned in Government Notification No. 2128, dated 16th November 1904.

18th January 1905.—Mr. Shumbhuras Chandappa Anikhuidi is appointed to be substantive *pro tem* Deputy Educational Inspector, Bijapur, *vice* Mr. Sangappa Mallappa Ankle, retiring, pending furthur orders.

30th January 1905.—Mr. Vinayak Sakharam Ghati, M.A., is appointed to act as Professer of Sanskrit, Elphinstone College, during the absence, on special duty, of Professor Shridhar Ramkrishna Bhandarkar, M.A., or until further orders.

6th February 1905.—Mr. E. H. Mc Dougall, M.A., (Oxon.), is appointed to be Professor of English and History, Elphinstone College, continuing to hold his present appointment in the Deccan College, until the end of the current term.

Mr. A. L. Covernton, M.A., (Oxon.), is appointed to be Inspector of European Schools in the Bombay Presidency, and the Central Provinces, with effect from 15th April 1905.

6th February 1905.—In modification of Government Notification No. 1251, dated the 9th July 1904, Mr. Govind Bahirao Bramhe, B.A., is appointed to be substantive *pro tem* Deputy Educational Inspector, Sholapur, during the deputation, on special duty, of Shaikh Jaffer Mahomed, B.A., or pending further orders.

APPOINTMENTS MADE BY THE DIRECTOR OF PUBLIC INSTRUCTION.

11th January 1905.—The following appointments are made in the Nasik High School :—

Mr. G. K. Dixit, 13th Assistant, to be 12th Assistant, *vice* Mr. Belgaonkar, deceased.

Mr. R. R. Soman, 14th Assistant, to be 13th Assistant, *vice* Mr. Dixit, promoted.

Mr. G. G. Sane, B.A., sub *pro tem* 17th Assistant, to be probationary 14th Assistant.

Mr. R. J. Gokhale, B. A., to be probationary 15th Assistant.

Mr. S. T. Pathak, sub *pro tem* 14th Assistant, B. J. High School, Thana, is confirmed in his appointment, and he is to be 17th Assistant, Nasik High School.

11th January 1905.—Mr. Gopal Narayan Shastri Phadke, is appointed probationary 14th Assistant, B. J. High School, Thana, *vice* Mr. S. T. Pathak, transferred to the Nasik High School.

14th January 1905.—Miss. M. Bhore, 2nd Assistant, Female Training College, Poona, is appointed 1st Assistant in the Mahalaxmi Female Training College, Ahmedabad, *vice* Miss A. E. Brooke, promoted; but Miss. Bhore will continue in the Baroda State till further orders.

16th January 1905.—The following appointments, are made :—

Mr. M. P. Mehta, 8th clerk, in the Office of the Educational Inspector, Northern Division, to be Clerk, Ahmedabad High School, *vice* Mr. C. V. Pandya, transferred to Surat High School.

Mr. D. N. Mujmudar. Head-Clerk, Deputy Educational Inspector, Ahmedabad, to be 8th Clerk in the office of the Educational Inspector, Northern Division.

7th February 1905.—The following appointments are made :—

Mr. P. T. Advani, Local Board Clerk, Deputy Educational Inspector, Larkana, and sub *pro tem* Local Board Clerk, Deputy Educational Inspector, Hyderabad, to be 2nd Local Board Clerk, Deputy Educational Inspector, Hyderabad, and sub *pro tem* 1st Local Board Clerk in the same Office.

Mr. J. T. Bhojwani, sub *pro tem* Local Board Clerk, Deputy Educational Inspector, Larkana, to be Local Board Clerk in the same Office, *vice* Mr. P. T Advani.

Mr. K. J. Ramchandani, sub *pro tem* Local Board Clerk, Deputy Educational Inspector, Karachi, to be 2nd Local Board Clerk, Deputy Educational Inspector, Sukkur, and sub *pro tem* 1st Local Board Clerk in the same Office.

7th February 1905.—Mr. M.A. Mehta, is confirmed as Clerk in the Mahalaxmi Female Training College, Ahmedabad.

7th February 1905.—The following appointments are made according to the new scale :—

Mr. R. M. Mahishi, B.A., 3rd Assistant Master, Bijapur High School, to be 2nd Assistant Deputy Educational Inspector, Dharwar, on probation.

Mr. D H. Bichu, 2nd Assistant Deputy Educational Inspector, Dharwar, to be 3rd Assistant Deputy Educational Inspector, Dharwar.

Mr. V. B. Ketkar, 3rd Assistant Deputy Educational Inspector, Dharwar, to be 4th Assistant, Deputy Educational Inspector, Dharwar.

7th February 1905.—The following appointments are made according to the new scale :—

Mr. V. G. Ghanekar. 2nd Assistant Deputy Educational Inspector, Poona, to be 2nd Assistant Deputy Educational Inspector, Poona.

Mr. A. G. Vangikar, P. E., 12th and sub *pro tem* 11th Assistant, Poona High School, to be probationary 3rd Assistant Deputy Educational Inspector, Poona.

Mr. R. A. Bapat, 3rd Assistant Deputy Educational Inspector, Poona, to be 4th Assistant Deputy Educational Inspector, Poona.

Mr. H. K. Vaidya, 2nd and acting 1st Assistant Deputy Educational Inspector Khandesh, to be 2nd Assistant Deputy Educational Inspector, Khandesh, but to continue acting 1st Assistant Deputy Educational Inspector till further orders.

7th February 1905.—Mr. R. A. Munshi, 3rd and acting 2nd Assistant Deputy Educational Inspector, Khandesh, to be 3rd Assistant Deputy Educational Inspector, but to continue acting 2nd Assistant Deputy Educational Inspector till further orders.

7th February 1905.—Mr. S. L. Asgekar, Head-Master, Local Board School, Asoda and acting 3rd Assistant Deputy Educational Inspector, Khandesh, to be probationary 4th Assistant Deputy Educational Inspector, Khandesh, but to continue acting 3rd Assistant Deputy Educational Inspector till further orders.

9th February 1905.—The following appointments are made in the Elphinstone High School, Gujrati side :—

Mr. A. B. Kotwal, B.A., probationary 13th and sub *pro tem* 7th Assistant, to be probationary 12th Assistant, *vice* Mr. Diranji transferred to the Ahmedabad Training College. Mr. Kotwal is to continue sub *pro tem* 7th Assistant till further orders.

Mr. D. S. Naralvala, B.A., S.T.C., 14th and sub *pro tem* 12th Assistant, to be 13th Assistant, but to continue sub *pro tem* 12th Assistant till further orders.

Mr. M. G. Shastri, M.A., probationary 15th and sub *pro tem* 14th Assistant, to be probationary 14th Assistant and sub *pro tem* 13th Assistant till further orders.

Mr. B. D. Audich, M.A., sub *pro tem* 15th Assistant, to be probationary 15th Assistant and sub *pro tem* 14th Assistant, till further orders.

10th February 1905.—Mr. L. P. Wadhwani, B.A., S.T.C., probationary 8th Assistant N. J. High School, Karachi, is confirmed in his appointment, but he will continue sub *pro tem* 5th Assistant, Shikarpur High School, till further orders.

Poona: Office of the
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14th February 1905.

J. G. COVERNTON,
for *Director of Public Instruction.*

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R. D. PRIOR,
Educational Inspector, C. D.

Poona, 10*th February* 1905.

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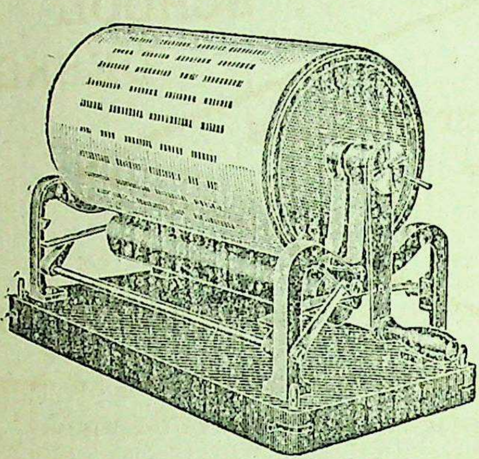

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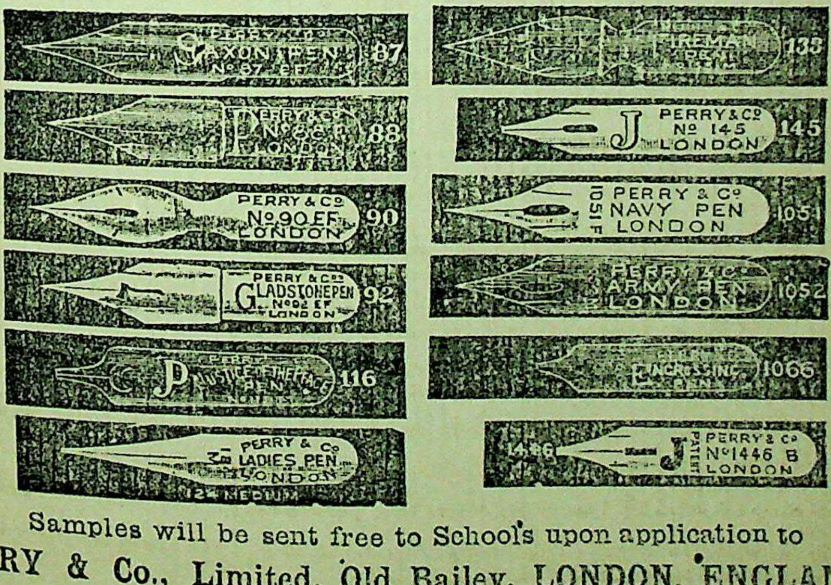
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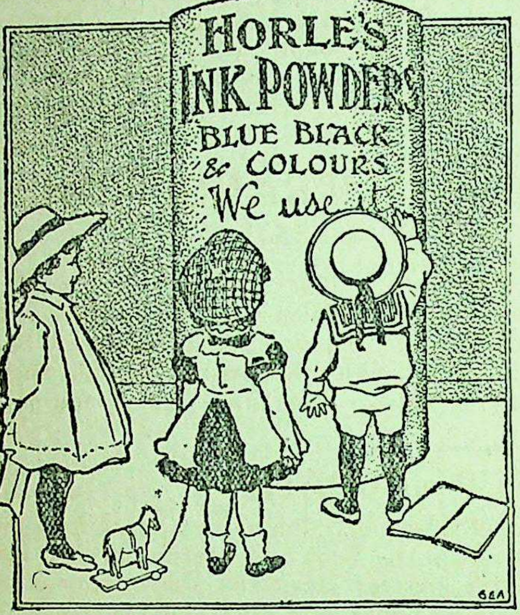

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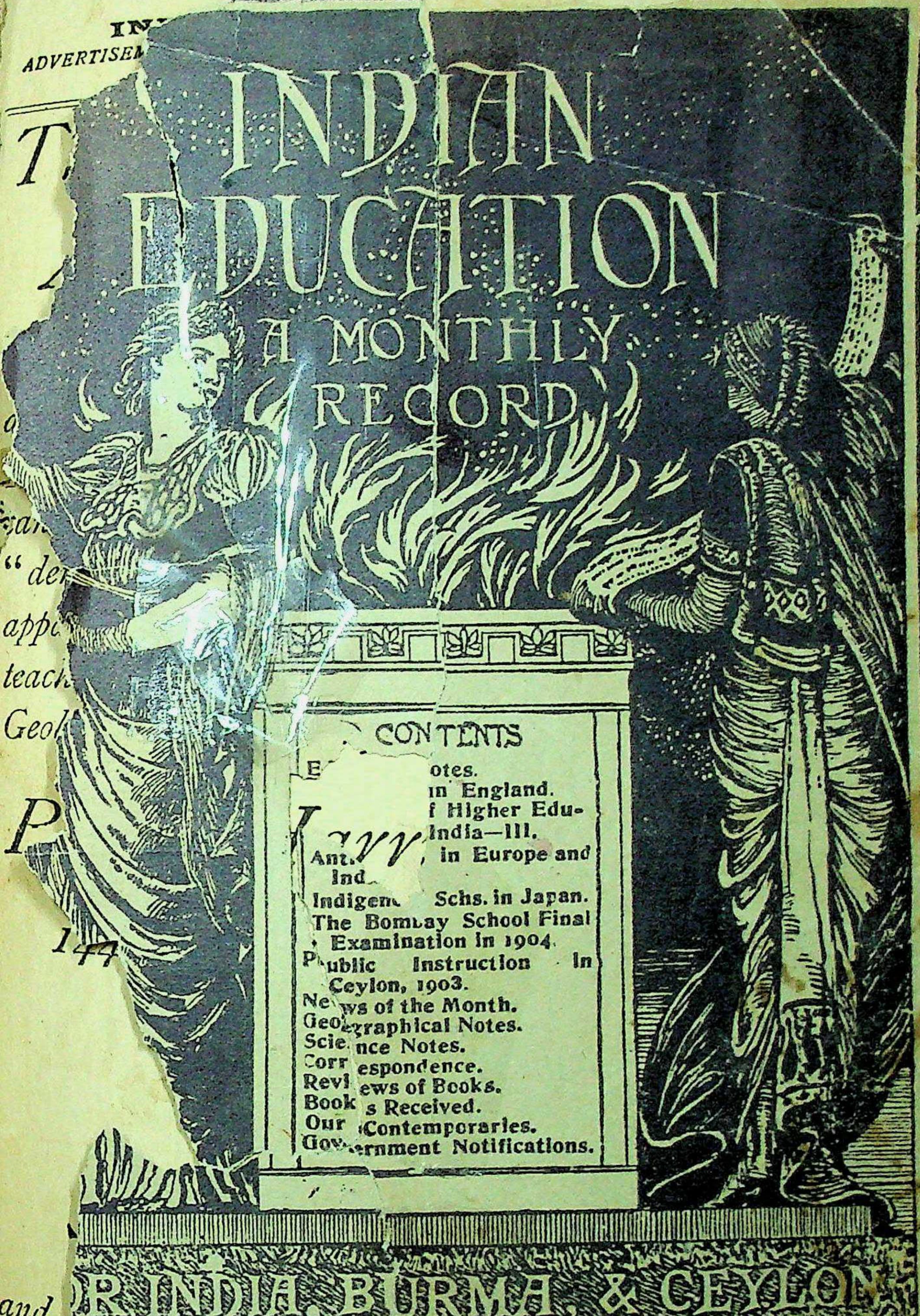

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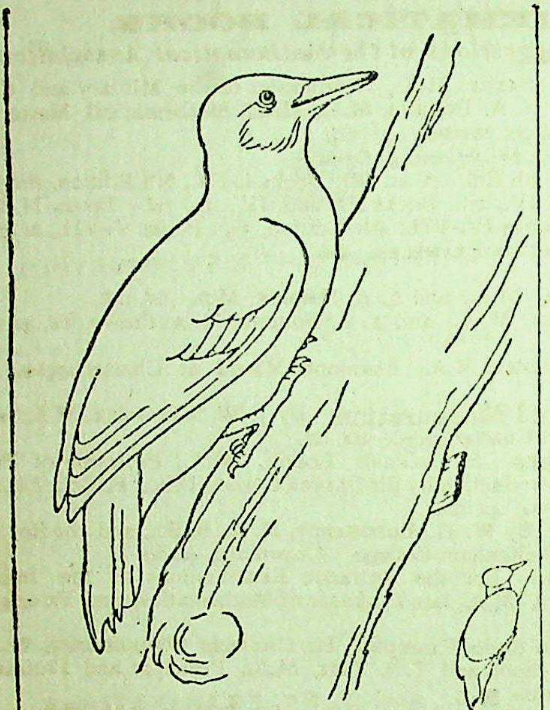

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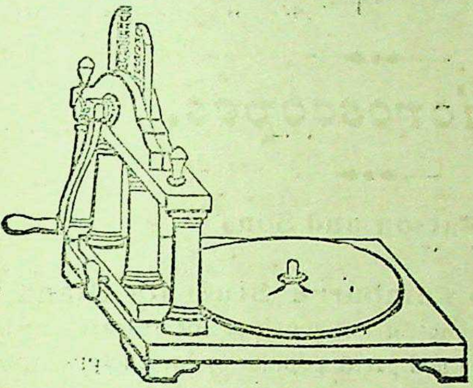

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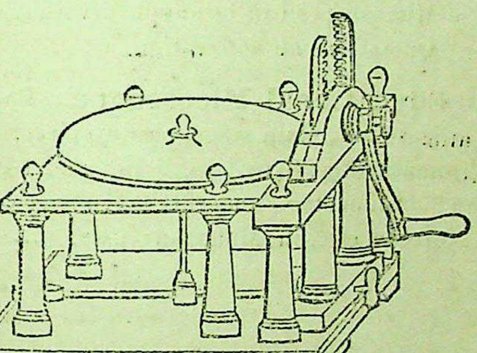
Fig. 2.



Air Pump, double barrels, 7 inches long, $1\frac{3}{4}$ inch bore and $5\frac{1}{2}$ inch stroke, with 8 inch ground plate, on Mahogany stand, supported by four pillars with small gauge plate, Fig. 2 238/

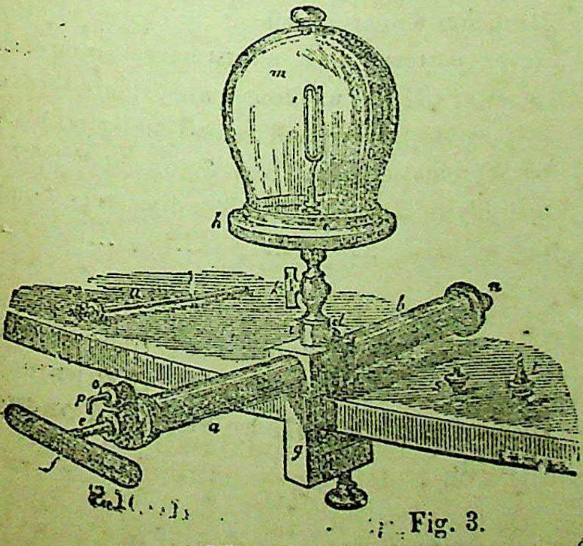


Fig. 3.

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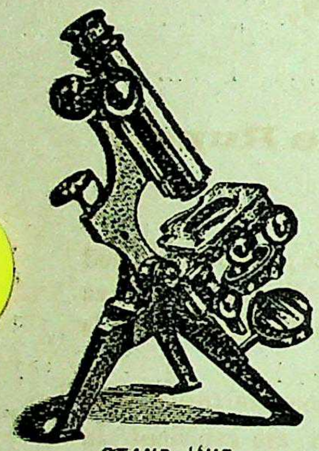

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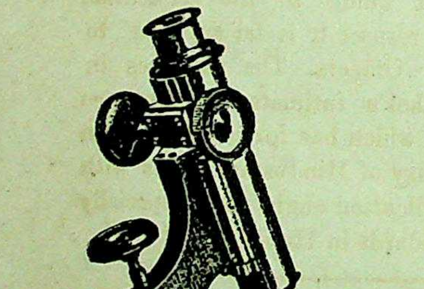

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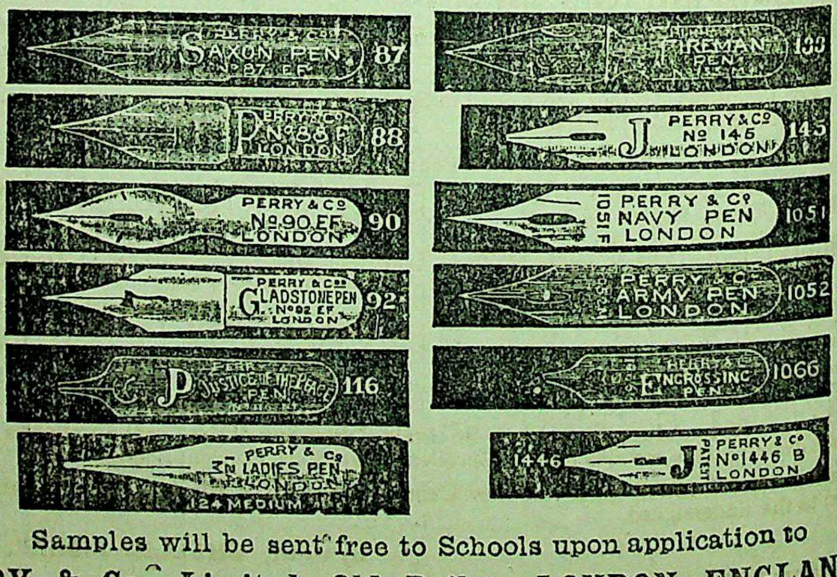
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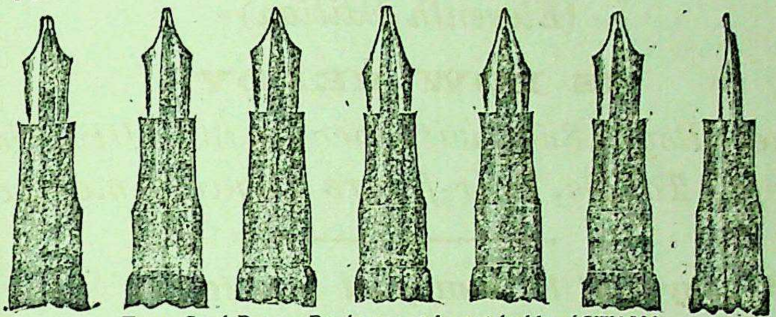

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Edited by A. L. COVERNTON, M.A. (Oxon.)

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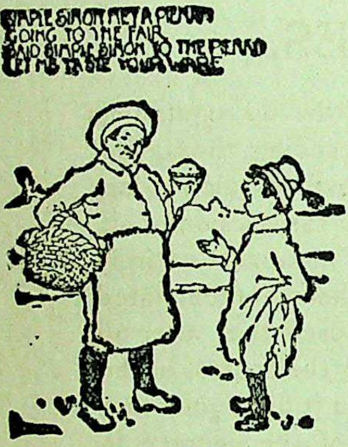
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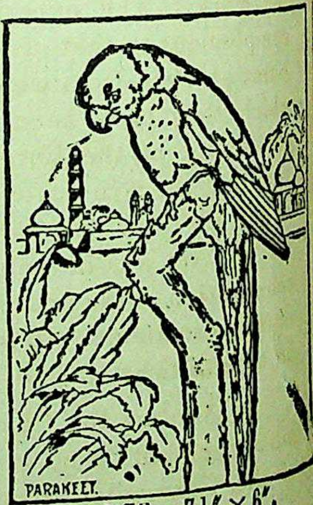

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INDIAN EDUCATION.

We,—we have chosen our path,
Path to a clear-sighted end,
Path of advance!

VOL. III.] FEBRUARY, 1905. [NO. 7.

EDITORIAL NOTES.

THE election of provisional Syndicates to draw up regulations for the new Universities has been proceeding throughout India during the last month. In the United Provinces alone does the election seem to have been completed to the satisfaction of all. In Bengal the election resulted in the creation of an almost entirely European Syndicate, a result which cannot have been contemplated by the framers of the Act. It cannot be supposed that after all these years there are no natives fit to take part in the control of the University, and in fact there are many. Nor can it be argued that there is no need of the advice of the natives of the country in the work. The experience of Indian Professors is a necessary complement to that of Europeans in such a task, while the different point of view from which Indian graduates view the system under which they have been educated is a necessary correction of the standpoint of the European administrators of that system. It is true that the Syndicate is only a provisional one. But the exclusion of natives gives an unfortunate support to the belief so widely spread that the Act was intended to officialise the Universities, and that the constitution of the provisional Syndicate will be a precedent for that of the permanent. It will be argued that the results of the election are due to the nature of the Chancellor's nominations.

In Madras the Chancellor's directions have been criticised as *ultra vires*, but on no important grounds. In Bombay the directions of the Chancellor for the election of the Syndicate have raised a great outcry among the members of the Law Faculty. Following, apparently, the lead of the Viceroy in Calcutta, the Chancellor has divided the Senate into Faculties and restricted each Faculty to the election of its own Syndics. The result of this is that, however many Faculties a fellow may be qualified to represent or vote for, he must stand or vote for that only to which he is assigned. The lawyers of the Senate have protested that this is *ultra vires* as well as unjust. As regards legality, the question must be decided by the proper legal authorities, and it does not follow that because counsel have given opinions against the Chancellor the latter must be in the wrong. Indeed to a non-legal mind a perusal of the Act seems to show that it is quite capable of bearing the interpretation which the Chancellor has put upon it. As regards the justice of the arrangement we are inclined to sympathise with the protestants. It is true that it deprives no one of his right to stand or vote for the Syndicate. But it does deprive the Arts Faculty of a number of fellows who are exceedingly well qualified to administer it and whose assistance is not so necessary to the Law Faculty. The class of lawyers is numerous, and the direction of Law studies does not, in our opinion, present so many difficulties as the direction of the study of the Arts. Moreover, there is force, we think, in Mr. Setalvad's argument from the actual result of the arrangement. The election of Syndics in Arts resulted in the choice of four professional teachers. We do not under-rate the importance of having a considerable number of such men on the Syndicate. But in the Faculty of Arts there is more need than in the Faculties of specialised studies like Law, Medicine and Engineering, that the professional teachers should have the assistance of men of general attainments who will consider the subject from a point of view other than that of the teacher of Philosophy, English, or classical languages. Under the present distribution of Fellows in the Faculties there was practically no chance of obtaining such. Lastly, the new arrangement has deprived some of a position in the Syndicate of which they were legitimately proud and whose duties they were well qualified to perform.

* * * *

European languages do not meet with much recognition at Indian Universities or colleges, especially Government colleges, yet the knowledge of at least one other language than English is, if not necessary, very desirable. We fancy that a good deal of the old contempt for foreign languages still lingers amongst those who in India administer education, a contempt bred partly of remembrance of the futile methods by which French and German were (and often still are) taught in English Public Schools. The fact that, for the majority of Hindus, French and German are of little practical value is, however, the chief ground for the neglect. But there are very many, especially in the great sea-ports of India, Calcutta, Madras and Bombay, by whom a knowledge of French or German is coming to be recognised as very useful. It is not in commerce that its use is so much found, we believe, as in study and in travel. Business firms in India do not, we fancy, have usually a large correspondence with France or Germany, and such as they have is carried on in English. If a German firm wants to do business with us, we have heard a business man say, it must correspond with us in English—a characteristically English method of doing business. But a constantly increasing number of natives of India is in the habit of visiting Europe, and they are beginning to realise the advantage of a knowledge of at least French if they are to derive the full benefit and pleasure from their travels. This is certainly true of the Parsis who are more and more taking up the study of French. Cynics may say that it is because they find the subject easier than others. But we believe that the reason given above is in most cases the main motive, while in the case of genuine students it may be that they find that a knowledge of French opens to them a second path of entry into the store-houses of European knowledge. Oriental learning is deeply indebted to Continental scholars and it is well worth the while of one who is anxious to study the literature of his own race to make himself acquainted with the work of scholars of other countries besides England. The growing importance of French—German has not yet attracted much attention—should receive more notice from educational authorities than it yet has. More adequate provision for its teaching should be made in colleges, especially the Government colleges where no attempt to teach it is made.

* * * *

The Mahomedan Conference at Lucknow, of which we give an account in "News of the Month," seems to have met with exceptional success and to have resulted in the collection of large sums of money for educational purposes. This looks as if the community were really beginning to rouse itself. If words can stimulate, Mr. Morison's able address should do much. He advocated two remedies for the backwardness of the Mahomedans, a Mahomedan University, and the formation of a company for promoting industrial enterprise. Mr. Morison's outline of the way to start such a University was very practical, but we doubt the advisability of such an institution, or rather we think that if Mahomedans can be educated to mix with other communities in the existing Universities, better results for India will be obtained. Of his second remedy we heartily approve. In the first place, instead of leading to more competition in the professions and Government services, it turns the attention of Mahomedans to work for which they are eminently suited. In the second place, it promotes the industrial development of India. There are many small industries whose progress has been much retarded, either by ignorance of the inventions which in Europe have rendered them more productive and easier, or by want of capital to obtain new machines. Mr. Morison's idea is to train young Mahomedans to the management and direction of such industries and to form a company of Mahomedans which will start such industries, run on modern lines, and place young Mahomedans in the direction of them, the object of the company being rather to provide an occupation for the members of the community than to make a large profit. Whether the scheme is practical or not can only be seen on trial. But it at any rate sets before the community in whose interest it is proposed the right kind of ideals. Mahomedans were used to rule India and monopolised Government service. With the advent of the British they were ousted from their place, and the Hindus have become monopolists in their stead. The Mahomedans, like spoilt children, have sulked by themselves, and sought neither profit in commerce nor power in office. If they think the latter at present unattainable, let them at least not neglect the former, nor cut off their nose to spite their face.

* * * *

Sandow's visit to India suggests the reflection that little is done in Indian schools for physical development, though no-where is it more required. The constitution of the Indian school-boy and student is naturally weak, for his diet, his home surroundings, and his pursuits are either directly harmful or at the best not of a nature to promote constitutional strength. In towns the evil is naturally much worse than in the districts, and in towns the remedy is at once more difficult and more easy. Easier, because the schools and colleges are larger and better instruction is more available; more difficult, because recreation grounds are so hard to obtain. Cricket, hockey, and field sports require much space, a considerable outlay on apparatus, and are provocative of frequent disputes among a race of boys amongst whom the tradition of the discipline of the playing fields does not exist. Field sports do not touch the question of diet, and moreover require a physical strength which a poor and vegetarian people often do not possess. They may take too much out of the boys. What is needed is some simple course of drill, and of gymnastic exercises, which can be practised in small space, and instruction in which can easily be given. Every college ought to have its gymnasium with a European and a Native gymnastic instructor. Drill should form a necessary part of every school's weekly course, and every school should have a play-ground or at least a hall where such drill could be practised. Sandow's ideas of what would be a simple course for Indian children or youths would perhaps be excessive, but there are doctors and European drill instructors enough to formulate a simple yet complete system of exercise and diet.

EDUCATION IN ENGLAND.

THE close of the year suggests a brief review of the progress made in English education during the last twelve months, and of the present state of feeling in regard to the more urgent points of educational policy. On the whole, the Education Act of 1902 is working well. The great Municipalities and the County Councils are throwing themselves with vigour into its administration. At no earlier period in English history has there been so general a desire to build up a coherent system of national education. For the first time, Englishmen are thinking of education as being from top to bottom one thing, which ought to be related throughout all its parts. But the more that the educational problem is looked into, the more difficult it becomes. If we brush aside the mere technicalities of the matter and try to get to the heart of the question, we realise the extraordinary difficulty of devising an educational system which would be really appropriate to the complex social needs of England and commensurate with the world-wide responsibilities of its citizens. This sense of difficulty is pressing with increasing force upon their minds of numbers of those who are devoting themselves to the work of local educational administration. Moreover, the volume of work involved in the management of multitudes of schools has proved to be enormous. Many are of opinion that the plan of entrusting educational administration to persons already burdened with the care of other provinces of local government will break down through the sheer weight of the facts which have to be taken into account. However, few would dispute the wisdom of having municipalised our educational control as one step in our educational history. Those whose duties take them into different parts of the country realise how much over-burdened many of the new Education Committees have become. Nor is it by any means clear that the placing of new responsibilities upon the Councils has, drawn into their service any large number of new men possessing special qualifications for the task. Things are working rather the other way. The number of Committees which it is necessary to attend deters many men from taking a more active part in municipal affairs. Another black cloud on the horizon is the vast expenditure necessarily involved in any effective improvement of English education. At one time, people used comfortably to talk about providing secondary education at £10 a head. It is now clear that this estimate will have to be nearly doubled. It turns out that the salaries paid to the assistant masters and assistant mistresses in great numbers of our secondary schools are wholly inadequate to attract into educational work men and women of the type which is needed to build up a new educational tradition consonant with modern needs. You may go to scores of local secondary schools, and hardly find a man who is receiving as his salary more then £200 a year. The great majority of the assistant masters receive about £150 a year. With the women, the case is worse. Though, owing to the comparatively few other professional opportunities opened to women, the supply of suitable candidates for vacant assistant mistressships is infinitely superior in quality to the corresponding supply for the filling of vacant assistant masterships. At Oxford and Cambridge, teachers advise their pupils not to think of becoming schoolmasters in local secondary schools. Nor is there any desire on the part of the under-graduates to adopt such a career. The whole thing has got a bad name. The results of this will be serious. What is needed in our secondary schools is not simply to maintain a high tradition of scholarship and of personal devotion, but, without sacrificing accuracy, discipline and thoroughness, and without cutting ourselves off from the old tradition of culture, to adapt the subject-matter of our curricula and the methods of our teaching, to the complex needs of a new time. With what her enemies would call belated perception of obvious facts and what her friends would style impressive and judicious deliberation, England is slowly settling down into the conviction that an efficient system of elementary, secondary, technical and university education is vitally necessary to the welfare of her national life. She is asking herself what she really means by education, and she finds that the question leads her into deep places and unfamiliar ways of thought. She is finding that education, if it means anything, is a process which trains body, heart and mind, for the duties of life—not simply of the life of money-making or professional promotion, or of pleasant recreation, but a life of duty. In short, every true system of education presupposes a stable order of society, for which it prepares its pupils. But we live in an age when old things are melting away, when old preconceptions have lost their former look of certainty, and yet when we feel ourselves being hurried forward by powers that we cannot withstand towards some momentous change. It is the sense of these underlying difficulties in educational policy that has produced the feeling of hesitancy and almost of bewilderment that now characterises so many of the most thoughtful workers in English education.

But happily, though the sky is dark, our marching orders are clear. There is much to be done, and it must be done quickly. In the first place, our secondary education must be put on a new level of efficiency. This will involve changes in the future staffing of the schools which will increase the normal annual maintenance cost of a good secondary education to something between £18 and £25 per head. Besides this, we have to take into account the cost of bricks and mortar. You can build a good secondary school for about £45 a place, not counting the cost of the site. Therefore, to provide a new efficient secondary school for 200 pupils involves a capital outlay of at least £10,000, and an annual maintenance expenditure of from £3,600 to £5,000 a year. To be set against this, are three sources of income endowments, pupils' fees and Government grants. Endowments are generally small. They are often hopelessly in the wrong place. Their forcible removal from one locality to another is practically impossible. The pupils' fees are, as a rule, out of all proportion to the real cost of an efficient education. People have got into the way of thinking that anything more than £12 or £15 a year for a secondary school fee is out of the question. The result is that the work done in the schools is sometimes hardly worth even what is paid for it. There will have to be a general raising of fees for all who can afford them. The cost of working a small school is of course proportionately much higher than that of working a big one. Thus, the cost of secondary education in small country towns will frequently be larger than in the great cities. Hence, there is need for some equalisation of cost by the help of public authority. Such help can come from two sources: from the County Councils, and from the State. The County Councils in the country districts raise their hands in horror at the idea of a *2d.* rate for higher education. The Government, though it has indulged itself in admirable descriptions of what elementary and secondary education ought to be, confines its monetary contributions within modest limits. The average grant payable in respect of a boy or girl completing a course of secondary education is £3-10-0 per annum, for each of the four years between 12 and 16, and nothing beyond. It seems likely, therefore, that the normal fee for a good secondary day school, will have to be raised to about £20 a year, and that the Government should be pressed to pay at least £5 a year in respect of every pupil working in the school. On the Local Authority would fall the cost of providing the site and buildings, the burden of maintaining the school through times of difficulty, and the duty of providing scholarships and maintenance allowances, which would bring the school effectively within the reach of really promising boys and girls whose narrow means would otherwise prevent them from enjoying the educational opportunities which they deserve.

In the sphere of elementary education there is a distinct movement of thought. People realise that the present methods of teaching do not make the children think for themselves. There is too much flitting about from subject to subject without care being taken to ground the pupils thoroughly in certain essential things. What is wanted, is the practice of teaching a few subjects thoroughly well, but having them taught by cultivated teachers who realise the bearing of one subject upon another, and who therefore are competent to give a right direction to the natural curiosity of the child, and not in their ignorance to thwart its enquiries and press it down into mere acquiescence with what it is told, or what other people believe. In other words, the reform of elementary education really involves greater culture on the part of the rank and file of the teachers. No one, who realises what the elementary schools have done for the discipline of the nation during the last thirty years, can feel anything but admiration for the devotion of the best teachers. But they would be the first to admit that the old system of pupil teacherhood, with its premature and narrowing limitations of professional work, has left a deep imprint upon the culture of many of those engaged in elementary school work, and also upon the tradition of our elementary schools, and the habitual state of mind of those concerned in their administration. A hearty welcome has therefore been given to the new Regulations of the Board of Education for improving the Instruction and Training of Pupil Teachers. It is not felt, however, that the Board had really thought out all that was involved in the proposals which it has the wisdom to make. The secondary schools are often far from being good enough to give the kind of education which an intending teacher requires. Moreover, a good English secondary school is a rather delicate mechanism, and its working can easily be spoilt by casting upon it suddenly a great mass of new material, unlike that which it is in the habit of dealing with. Nor were sufficient pains taken by the Board, before launching its new Regulations for the Instruction of Pupil Teachers, to face the financial question involved in the provision of good secondary education. Furthermore, the improvement of our elementary schools requires something besides improvement in the staff of teachers. It calls for sweeping reductions in the size of classes. Enter a Board School as you pass, and look at the number of children who are receiving instruction at one time from one teacher. It is by no means unusual to find fifty, sixty, or even seventy children, sitting in serried rows, under oral instruction. But for any searching discipline of the mind, these large classes afford no opportunity. From the very bottom of the elementary schools to the top, there should be cultivated teachers, working on simple programmes in small classes. And all this means immense expense. Moreover, in hundreds of our English public elementary schools, a clever boy or girl marks time between the ages of twelve and fourteen. The intellectual calibre of those teaching in the school is often insufficient to carry forward the pupils to higher levels of work. We need a new type of higher elementary school, taking children from eleven to fifteen years of age. The first two years of the course would be of a general character, laying special stress upon the teaching of English, of geography, of arithmetic and elementary mathematics, on nature study, on drawing and handicraft exercises, on class-singing and on drill and physical training. At the end of the first two years, the course would separate into three alternative divisions. Of these, the first would be, in manufacturing districts, industrial in its character. While retaining a strong element of liberal culture, this course would lay stress upon applied arithmetic and geometry, on the elements of mechanics, and on manual training in wood-work and ironwork. The second of the three courses would be for girls and would lay stress on household management. It would provide courses of instruction in cookery, laundry work, needlework, (especially mending, darning, and cutting-out), the care of rooms, marketing, and the keeping of household accounts. But here, too, great stress should be laid upon the teaching of liberal subjects, so as to cultivate among girls a love of good books and an admiration for high ideals of life. The last of the three alternative courses would be adjusted to the economic needs of the district. In a commercial city, it would be commercial, designed for boys and girls and laying stress first and foremost on humane studies (for, after all, what is business, but dealing with human beings?) but also on the more technical acquirements needed for livelihood, namely, expertness in making arithmetical calculations, legibility, speed and correctness of handwriting, acquaintance with the commoner forms used in business intercourse, cheques, invoices, etc., and, not least important, a sound knowledge of geography, taught on modern lines. Throughout all these three courses, however, there would run certain common elements. All the senior pupils in the school, boys and girls, should receive careful instruction in the laws of health. All should join, so far as their voices permitted, in class-singing. And all should go through a carefully-graded course of physical training. The need for higher elementary schools on such lines as these is in some districts urgent. The cost, however, of providing them will be great. So far as I am able to judge, the education, apart from the cost of sites and buildings, could not be provided at less than £8 per head. Against this, there can only be set a Government grant of rather less than £3 per head and (by express permission of the Board of Education) a school-fee of 6*d*. a week. But there are many small towns and important villages which require something intermediate between the fully organised higher elementary school and the ordinary public elementary curriculum. To meet these cases, it is suggested that supplementary classes should be organised at the top of existing elementary schools. These should be well staffed, and might attempt part, at any rate, of the courses offered in the higher elementary schools. Owing, however, to the smallness of the number of pupils, the cost per head would be relatively great. I fear that it could not be done at much less than £10 per head; and against this the Government grant would not be more than just under £2-10-0.

In Wales, a remarkable thing has happened. There has suddenly broken out a religious revival of great intensity. The chapels, and even the churches, are crowded with worshippers, who remain for long services often far into the night. There is very little preaching in the revival; it shows itself mostly in congregational singing and in public confessions of sin. Many of the theatres are closed. Down in the mines, the pitmen meet for services at intervals in their work. The coal-owners say that the quality of the men's work has greatly improved, and that the amount of the output has increased. The movement is spreading from one part of Wales to another, and affecting every denomination. The result is that, for the time being, political controversies have fallen into the shade. The angry movement against the working of the Education Act has lost much of its force. The teachers seem to hold the balance of power, and there is good hope that even yet some way may be found of averting what would in effect have been an educational civil war.

The volume of gifts made in England to educational institutions steadily grows. Speaking in his capacity of Chancellor of the University of Birmingham, Mr. Chamberlain recently expressed the hope that the time was coming in England when men who had more than they wanted, more perhaps than was good for them, would find no better opportunity of disposing of the surplus than in the shape of contributions to those universities in which they were interested.' Mr. Chamberlain is always sensitive to what is in the air. There is no doubt that a real change has come over English feeling in this regard. Cambridge has just received a large benefaction to its scientific department. At Birmingham, a munificent donor, Mr. Richard Peyton, has endowed a new Chair of Music, which, at the founder's request, has been offered to and accepted by, Sir Edward Elgar, the distinguished composer of the "Dream of Gerontius" and of the "Apostles." It is understood that Sir Edward Elgar, who has already a friendly connection with Birmingham, is convinced that it is possible to form in that city a strong School of Music. To the vacant Chair of English Literature at the University of Birmingham the Council have appointed, to the satisfaction of all who appreciate the pluck and persistence of his pioneer work on behalf of the teaching of English Literature, Mr. Churton Collins. Oxford and Cambridge are stirred to their depths on the question of compulsory Greek. If we can only get our secondary day-schools thoroughly reorganised and working on a high plane of intellectual efficiency, the question of Responsions at Oxford will quickly come up for reconsideration and settlement. The progressive party in Oxford were perfectly right to raise the question of compulsory Greek; but the point on which effort should next be concentrated is the reform of the secondary schools, not a mere adjustment of university examinations.

The question of a Leaving Examination still broods over the educational world. There are signs that some eminent people are possessed with an earnest belief in the wisdom of compelling secondary schools to impart to all of their scholars a common measure of what the Germans call *allgemeine Bildung*. It is to be hoped, however, that the administrative difficulties of the situation may deliver us from any serious attempt to turn out from our secondary schools at 16 or 18 years of age little paragons of many-sided knowledge, all of it acquired by patient listening to oral instruction, and none of it either vital or profound. Here, again, the real remedy for our present troubles does not lie in changes in mere examinations (though I am far from denying the urgent need for change in this regard), but in staffing our schools with teachers of real power, strong character, and trained qualifications for their work.

MICHAEL E. SADLER.

EDUCATION IN PHILOSOPHY
VERSUS
INSTRUCTION IN PHILOSOPHIES.

PHILOSOPHY is not a body of truths, it is only a way of thinking. Nor does the study of philosophy mean a detailed acquaintance with certain philosophers whose works happen to have been selected as text-books in a University curriculum. What Kant or Martineau or John Stuart Mill thought on any given question is of no intrinsic importance. They cannot all be right, and the chances are that they are all wrong. But the ability to use Kant's point of view as an instrument of thinking is an intellectual asset, of which the importance cannot be exaggerated.

These statements may seem to be common-places. It is a pity they are not so. The study of philosophy suffers just because there is no real grasp of these fundamental truisms about its function. The examiner in philosophy is led astray by the analogy of other arts and sciences, in which there are to be found beautiful solid truths, four-square without a flaw, which no man doubts, which can be put into text-books and got up out of text-books, which the candidate can disgorge and the examiner can value at so many marks per square foot of information given.

When the examiner errs the teacher goes astray. For, although we all know that examination is a subordinate function of the teacher's art from the point of view of the ideal education,* the brute fact is that the examiner is the man with the whip, and if he happens to be blind in one eye the team will end its career in a ditch. It does not greatly matter whether you define a University as a teaching or as an examining institution. The central fact remains that the power of the examiner, for good or for ill, is despotic. He can cripple the intellectual development of the student and turn the teacher into a miserable drudge, a middleman between the learner and the text-book, a pander of prostituted knowledge. Or he can ensure the existence of a genuinely intellectual atmosphere, in which spontaneity co-exists with a wise direction of studies and where reading for examinations is not incompatible with a liberal education.

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* *Vide* Report of Universities' Commission, 1902, § 81.

The excessive respect which the examination papers of the University of Bombay display towards the text-books prescribed in its curriculum is inconsistent with its character as a teaching, and not merely examining, institution.[*] London University frankly declares that in these days of cheap text-books the functions of the lecturer are of much less importance than they were in those mediæval and bookless times of which Oxford and Cambridge are such benighted survivals. Admitting this, the London authorities are only consistent with themselves in providing for an immense extension of the merely examining functions of the University by the admission of external students; that is, of students not attached to a college, but self-taught by text-book. If it is a matter for congratulation that Indian Universities are leaving their London model behind and developing into teaching institutions with a true collegiate life, why not be consistent and carry the process of emancipation a step further by getting rid of that fetich, the text-book?

We have to apply the principles, from which we set out, to the curriculum in philosophy. What books are recommended is of less importance than the spirit in which they are used. When a student asks a professor what books to read, it ought to be possible to reply—"Anything you like: and plenty of it: and *don't* read with a view to reproduction in the examination." But a mere glance at the examination papers set yearly shews that the professor who gave such advice would not be doing his duty by the material interests of students, whose future depends on examination results. The unfortunate man would have to do violence to his better feelings and reply—"Read the text-books: and don't read anything else: and be sure you commit them to memory."

THE B. A. COURSE.

There are four papers in philosophy in the Bombay examination for the B. A. Each of them is confined to a prescribed book. The result is that the professor has to lecture not on philosophy but on text-books. If he suggests to his students that it would do them good to write essays on general philosophical questions, he receives the unanswerable answer that it will not be of any use for examination purposes and that time is short.

The value of prescribed books is not denied. Philosophers' opinions are food for thought and instruments of thinking: and the student cannot think *in vacuo*. But the present system tends to make it unnecessary for the student to think at all. There is a sufficiency of dogmatic philosophy in India without adding unassimilated sections of Western speculation to the store. There is little value in philosophies bolted whole.

The difficulty is to ensure the intelligent use of the books prescribed The Indian Universities' Commission (1902) recommend that a paper in each branch of philosophy, defined by a syllabus, should take the place of prescribed books; but that books in which each branch may be studied should be recommended. The change is altogether too revolutionary in theory: in practice it will make no difference whatever. It is too revolutionary, because it is a mistake to banish prescribed books altogether. It will make no practical difference, because a "recommended" book is simply a prescribed book under another name. If a paper is set, say, in Psychology, and James' *Psychology* is recommended, there can be very little doubt that the paper will be set straight out of James' *Psychology*.

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[*] It seems to be assumed that because the University leaves teaching to the colleges it is not itself a teaching institution. But surely the real *differentia* between an examining and a teaching University is the admission or non-admission of external students, not the question of the existence of University lecturers as distinguished from college professors. A University is the organization of teaching centres, not one centre among others. Of course it is not denied that the University as a whole might profitably undertake advanced teaching which the individual colleges do not supply.

Prescribed books are valuable if rightly used; and the right use of them can be ensured by adding to the special papers (on the set books) other papers of which the scope would be defined in general terms in a syllabus. The existence of papers entitled simply "Logic" and "Moral Philosophy" would compel the student to think for himself and would set the lecturer free to deliver a systematic course on philosophy with no more than an indirect reference to the special books. But the syllabus should not be hampered by "recommended" books. If this is done, the general papers cannot fail to degenerate into special papers again. Prescribed books are a good thing and perfectly indefinite papers are a good thing, if they balance one another.

Mill's Logic and Aristotle's Ethics have the qualities of breadth and suggestiveness essential for the purpose. It would be lamentable to object to the former author on the ground that his doctrines are out of date. To do so implies that there is such a thing as philosophical orthodoxy. There is no such thing. Philosophy is only an attempt to think clearly, and Mill's Logic is and always will be an invaluable aid in the process. But Martineau's *Types* is objectionable. Apart from its vexatious rhetoric, it is historically misleading. It lacks perspective and gives a distorted account of the systems it surveys. There is little in it of permanent value in the history of thought. It was perhaps chosen because it gives a great deal of miscellaneous information. It would be much better to leave this to the professor. He would do it better.

THE M. A. COURSE.

The recommendation of the Commission to recognize Indian philosophy in the curriculum will be heartly welcomed. But, excepting on this point, they are silent. And yet the M. A. course is at present just a welter of text-books. To cover the ground by lecture is an impossibility. General lectures are pronounced useless by the student. Special lectures framed in the spirit of the examination papers would be an educational abomination and a thorn in the flesh for the lecturer.

A combination of general papers with special subjects is again the remedy. At present all the papers (except the Essay) are "special subjects." The result is that the virtues of the scholar and the virtues of the thinker are equally at a discount. For no one can specialize in half-a-dozen authors without losing both originality and accuracy. The paper in Natural Theology is probably unique. It combines all possible faults. It consists in the study of three books which are (to say the least of it) of no permanent philosophical value: and the questions are set directly out of those books.

Ought there to be a separation between the ordinary and an "Honour's" degree? Any reform in the philosophical curriculum must make increased demands upon the professor. Is not the same true of the student? The Commission, however, recommends that philosophy take the place of History and Economics as the compulsory subject on the ground that "in addition to the importance attaching to the truths it embodies, it has, like mathematics, a high disciplinary value in the training of the mind." Having spoken already of the "truths" of philosophy, we venture to add that the analogy with mathematics is misleading. Philosophy is something more than a body of doctrine; it is something more than mental gymnastics. It is a training in self-knowledge. And it may be doubted whether it can be profitably administered in small doses and to all patients. If there is to be no distinction between Honours and Pass courses—if "the examination for the M. A. should be regarded as the Honour's examination"*—would it not be better to leave History and Economics as the compulsory subject on the ground that a little history is of greater educational value than a little philosophy? If philosophy is essentially an "Honour's" subject, why force it upon any but those who propose to take their M. A. in philosophy? The attempt to demoralize the subject may degrade it yet further.

A University ought to exist for the sake of the best men in the country. The Indian curriculum fails to provide for such men. Its reformers have not enforced this ideal. They are content to continue the output of graduates by the gross. They might have made an effort to give to the Indian University that position of intellectual eminence to which their traditions entitle the Indian people. The effort has not yet been made. Until it has been made, it may be doubted whether the study of philosophy can become of very much value in Indian education.

H. N. RANDLE.

MILL AS AN EDUCATOR.

(*Continued from page* 259.)

NOUMENON AND PHENOMENON.

MILL'S limitation of human knowledge seems to demand some further comment. External objects are assumed to be the causes of our sensations, but their influence is not more accurately defined. Resemblance between sensations and their causes is denied; we meet, however, with the unqualified admission of the principle that the causes must be "adequate to produce those effects." Now, the differences between our sensations are often so great that they necessitate the assumption of differences affecting the causes themselves. The sensation representing one quart of milk cannot be traced to the same object that gives us the impression of ten gallons of water. A bag of rice balancing a hundred-weight contains doubtless more of the real thing than another bag keeping in equilibrio only half that weight. When perceiving different sensations of temperature produced by the eastwind and southwind, respectively, we can after all conclude that these winds differ in some certain velocity and amplitude of the vibrations of the air. The various shades of colour enable the physicist to calculate the length and range of the undulations of the luminiferous ether, and to derive these differences from intrinsic differences in the constitutions of the reflecting bodies. Likewise, in reference to immaterial causes, the study of the plan drawn up by the architect enables us to form at least an opinion of the intellectual capacity and the skill of its author. It is evident that if Mill had drawn the conclusions that logically flow from the principle of adequateness or proportion, he would have arrived at different results. The sensible qualities of objects are not mere covers or masks superimposed on the substance and completely hiding its nature; they are as many different aspects, states, and *activities* manifesting the nature of the thing; in other words, they are partial presentations of the object.

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* Report, § 173.

Even Mill allows that in or through sensations bodies manifest themselves to us (§ 8). Hence, by contending, at the same time, that they remain to us unknown and unknowable, he is guilty of the paradox that there are manifestations by which nothing is manifested. An object cannot be known unless some of its attributes are known by a representation faithful and correct as far as it goes. And, therefore, if the sensible qualities were in no sense a type of something inherent in the object, the latter could not even manifest its bare existence. Suppose a closed box is presented to us with the solemn assurance that it contains some object. But this object, we are told, cannot be ascertained either to be animate or inanimate, big or small, moveable or immoveable, heavy or light, or of any weight whatsoever. Who then would believe in any unknowable thing inside the box? To the condition of such a mysterious object enclosed in a box the thing-in-itself or noumenon has been reduced in Mill's philosophy. It is hidden away from the inquiring mind behind high walls without loop-holes and chinks, and placed out of all relation with the knowledge we possess. But if, as Mill maintains, our sensations or phenomena contain no data that may truly be called types of the noumenon, we cannot at all regard them as related to the noumenon; in other words, we cannot know them as phenomena of some noumenon. Possibly there are other things besides my passing subjective states; there may be hidden realities; but if Mill from his standpoint maintains that they certainly exist, he commits himself to an unwarrantable statement. In my opinion there is no escape from the dilemma; the noumenon must either give up its unknowable character or its claim to be recognised as existent.

It cannot be demanded that all true knowledge should be unlimited so as to penetrate to the innermost nature of things. That the mind does not fully comprehend its objects, that it does not know all their properties, inclusive of those constituting their very essences, is but a familiar truth, and admitted by all sound philosophy. But what is incomprehensible need not be unknowable. To identify these two notions would mean to expunge the word "knowledge" not only from the dictionary of the philosopher, but also from our daily language. Again, when denying knowledge of things-in-themselves, Mill means either things as apart from all relation to the mind, or things as they are not actually expressed in our sensations. In the former case he simply asserts a truism. For whatsoever is known, even concerning the phenomenal world, is known as related to the mind. To speak of knowing things as unrelated to the mind is, as Martineau remarks,[1] to talk of not simply an impossibility, but a contradiction; and a denial of the validity of knowledge, on the ground that it exhibits things only as set in relation to the mind, involves the very same inconsistency as that to which absolute scepticism is committed. Even in this negation the competency of our judgment is supposed. In the other case, if we take Mill's contention to mean that we know only what is directly presented in our sensations, it is simply to be denied. Our intellect penetrates beyond sensations, and apprehends reality in some of its states and activities. Mill himself habitually contradicts his fundamental principle by professing belief in what is not contained in sensation as such, and does not fall under sensible qualities. The very titles of the subdivisions of our chapter as—Substances, Attributes, Bodies, Minds, etc., if they are not merely employed to hide the opinion of the writer, imply much more knowledge than sensations can ever afford to us. Here again Mill presents us with two philosophies. By the one he takes refuge in the Unknowable, and in the other he is the practical reasoner taking his cue from Aristotle.

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[1] A Study of Religion, Vol. I., p. 113.

ATTRIBUTES.

Idealistic agnosticism finds a still clearer expression in Mill's treatise on attributes, in which he maintains that the distinction commonly made between ideas and sensations is purely verbal, and that our subjective states are all that at bottom we can mean by qualities, quantity, and relations of bodies. Mill's denial of objective knowledge is therefore absolute. His phenomena, though verbally always, in some way, connected with external objects, are stripped of all cognitional value regarding real things. His stock-phrase, sometimes slightly varied: "Of the outward world we know only our sensations," *i. e.*, subjective states, is absolutely meaningless. In plain language he ought to say: Of the outward world we know absolutely nothing. But in the "System of Logic" Mill has to avoid an open profession of radical agnosticism as well as of extreme idealism. An unqualified denial of external reality, or of the possibility of having access to it, would deprive him of the materials required for the construction of a system of Inductive Logic and of the foundation for his opposition to Conceptualism. It would also render it impossible to set up an objective standard of truth, "an outward standard, the conformity of an opinion to which constitutes its truth," or to ascertain "facts" by which opinions are judged. (Book III., ch. 21, § 3.) For this reason he tries hard to remain in some way in contact with the outside world, and prefers not to see that between the mind and an unknowable world there can be no relations, and that an "outward standard of truth" cannot be gained, if we know only subjective states.

About another fundamental question Mill's mind seems not to be at perfect ease. After all our sensations must have some cause. What, then, is the cause to which ultimately they are to be traced? The author finds it in "the presence of the assemblage of the phenomena which is termed the object." However, it would appear that the *presence* of phenomena is precisely the sensation itself and can, therefore, not constitute its cause. We also notice that the term "object" has undergone an important change. Whilst before identified with body and represented as external to the mind, it is now regarded as an assemblage of phenomena, which, as we learned, are only verbally distinct from sensations. Thus Mill passes within the same chapter from realism to idealism just as it suits the requirements of the moment. That by such methods the beginner in philosophy is trained to consistency in thought cannot be maintained, and if we suppose him to put the very pertinent question: How, then, are we to define the author's opinion as to the reality of the outward world?—the interpreter will be at a loss for a clear and definite reply. He may adopt the careful wording of the answer given by Masson,[2] that Mill, though, on the whole, inclined to realism, advances at the same time "views susceptible of an interpretation into pure idealism." All this will be very disappointing for the student who is aware with the late Sir L. Stephen that thus "an obscurity is left at the foundation" of Mill's philosophy. All the questions connected with this problem, as, *e.g.*, the origin and nature of sensation, the import of propositions, and the true significance of the laws of nature, remain unsolved. The doctrines laid down in other chapters, as in those on Essential Propositions, on Definitions, on the nature of Classification, on Necessary Truths, and on Causality are, it seems to me, in need of a thorough reconstruction. Finally, the attempt to prove the Law of Causality from particulars, although, according to Mr. Balfour, worked out "as ingeniously as possible," does not, in the opinion of the same competent writer, "stand for a moment against hostile criticism."[3]

(*Concluded.*)

H. BOESE, S. J.

EDUCATION IN THE TRANSVAAL AND ORANGE RIVER COLONY.*

(*Continued from page 262.*)

WHEN Mr. Sargant first visited the Transvaal and the Orange River Colony, he found that a number of schools had been opened in the latter along the line of the railway under the Administration of the Military Governor, but that the Military Administration of the Transvaal gave no encouragement to education. There were, however, a number of private schools for Dutch children in the Transvaal under a Committee in Holland, which was desirous of continuing the work of education on the same lines as before the war. In one of the prisoners' camps, moreover, in Cape Colony the prisoners of themselves had started a school for themselves. This last suggested the direction in which a start could be best made, and Mr. Sargant's first efforts were directed to starting schools in the Concentration Camps. The difficulties were great. The goodwill of the prisoners and their consent to instruction in English had to be won. Teachers had to be found, for it was not always that the prisoners included men whose profession was teaching. The Camp Superintendents were often too busy to lend help or more interested in other matters. Accommodation and equipment were hard to obtain. "One school was opened in a grove of trees at some little distance from the tents of the refugees. Teachers volunteered for duty, the children brought small packing cases for seats, and their mothers gathered round at a respectful distance. Within an hour and a half of the advent of our emissary from the Education Department the ordinary school-routine was in progress. . . . . . In another case the Concentration Camp had been pitched upon a race-course. Our only possible accommodation was the grand stand; and for many months, in spite of wind and sun, the children grouped themselves on its singularly inconvenient benches to read their Dutch Bibles and to learn to speak English. These subjects, with writing and arithmetic, occupied nearly the whole of the school-day." By degrees things were improved. Canvas shelters were replaced by commodious class-rooms built of green brick or wood and iron. The school staff were given a separate mess-tent, a reception-room, marquees for sleeping, native servants, and even a cook. After the school-work was over, hockey and tennis, or even riding-horses were provided by kind friends, and illustrated papers and magazines were available in the teachers' common room. "In fact, apart from the alternate heat and cold of the day and night, and the plagues of wind, dust, and flies, life was more than tolerable in these camps: in some it was gay."

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[2] Recent British Philosophy, pp. 78, 84.

[3] Defence of Philosophic Doubt, Ch. II.

* Public Education in the Transvaal and Orange River Colony, November 1900 to February 1904. By E. B. Sargant, Esq., Director of Education.

The scarcity of teachers was overcome by importation from Great Britain and Canada, Australia and New Zealand. The Education Office, under Mr. Sadler, seems to have organised the despatch of these teachers admirably, and to have displayed a care and foresight for their comfort very surprising to one familiar with the methods of the India Office in analogous circumstances. Clear and brief instructions as to clothing and personal requisites were supplied. They were entertained in London and seen off from Southampton. "In my belief," says Mr. Sargant, "the English nation looked upon these teachers as the fore-runners of peace." At Cape Town they were met by ladies of the Education Department, who conducted them on the long railway journey, took care to form an intimate acquaintance with them, informed them of all particulars they wished to know as to their camp life, and quieted their alarm when occasionally the train was stopped owing to the rails being torn up or bullets struck the carriages in which they were travelling. One camp had a reputation for being the worst in the Transvaal, and the Inspector feared that only the residuum of teachers would be sent there. "I offered him the first chance of addressing the latest comers and advised him to paint the conditions of life in that camp in the blackest colours. He did so, and then asked for volunteers. Four of the best and most refined teachers of this or any other contingent stepped out and intimated that that was the work for which they had come to South Africa."

From the beginning of 1901 to May 31st, 1902, when the Vereeniging terms of surrender were signed, attention was concentrated on these camp schools. In the Transvaal the number of children in them rose from 1,859 to 17,213; in the Orange River Colony from 1,317 to 12,066. During the same period the numbers in the town schools in the Transvaal rose from 2,020 to 10,727, and in the Colony from 1,519 to 2,691. From the date of the peace the camp schools began to decrease, while the attendance at town schools rose higher than at any former period in the history of either State. The camp schools had served their purpose, and were no longer required. Their place was gradually taken by country schools. These served for the children of farmers who had returned to their homes. They were controlled in the Transvaal by twelve inspectors, with deputies under him. The deputies were junior men sent out from Home on temporary engagement as district headmasters. Such appointments, it is worth noting, proved attractive to young University graduates with some teaching experience and, in several cases, high academic distinction; yet they went out on the full understanding that they could not as a body expect permanent administrative or inspectional work. For the teachers the change from the camp to the country schools implied new hardships. They had to leave the comparatively pleasant surroundings of the long-established camps to live in "weather-beaten bell-tents pitched near to some unroofed farm-house, of which only one or two rooms had been made habitable by sheets of iron nailed overhead; a smoky stove; tinned rations brought from the nearest depôt; no medical comforts; no companionship, except that of the few neighbouring land-boers and their families—the men watching the skies for signs of a cessation of the drought, the women counting endlessly the damage to their homes, the children half-cared for and scrambling for their meals. It required courage to face conditions such as these without losing heart." There were farm-schools in the Transvaal within two months of the first "inspan" for home, and within one year there were almost as many scholars in the country schools as had ever been in the camp schools.

The town schools also grew rapidly, but more consistently in the Transvaal than in the Colony, and expansion ceased in both about the same time. The reasons were that refugees were allowed to return to the Johannesburg mines long before the end of the war, and their children swelled the total. This advantage was lost by the Transvaal when the depressed state of the gold mining industry checked the flow of population to the Rand.

It must not be supposed that the importation of teachers threw out of employment the teachers of South African birth who had served the Republican Governments. Many of these were employed in the camp schools, and for those who had done good work room was found in the new administrations. Out of a total of 992 teachers in the Transvaal, 356 came from over sea, and in the Orange River Colony, 119 out of a total of 314. Many of the Africander teachers had come originally from Holland, of whom some returned to their homes and some refused to serve under the English regime. The importation was intended only to supply the deficiency thus caused, and steps were taken to start normal schools for the training of additional teachers. It was at first found impossible to obtain a sufficient number of scholars who were up to the standard of entrance to these training schools—the Matriculation examination of the University of the Cape of Good Hope, but rather than re-introduce into the schools the system of pupil-teachers for infant classes, which Mr. Sargant thought mischievous, the standard of entrance was temporarily lowered.

It is impossible in the limits of an article to trace further the interesting history of the development of education in these two new colonies. The policy which guided that development, so far as it has been as yet embodied in law, is thus summarised by Mr. Sargant—(1) The development of a free, undenominational and non-compulsory system of Primary Schools for European children; (2) State assistance to Denominational Schools; (3) High Schools and Normal Schools under Government control; (4) Technical Schools of such a character as ultimately to form part of a teaching University; (5) Compulsory registration of private schools and their compliance with Government regulations as to sanitation, record of attendance, and the certification of teachers; (6) The association of the various churches with the State in regard to religious teaching in its schools. Other articles of policy which have not yet been applied are—(7) The offer to every ordinary European child of the same amount of State aid and to children of unusual capacity of State bursaries; (8) The association of local financial responsibility for the schools with their local control; (9) Subordination of examination to teaching; (10) The endeavour to secure united action in regard to all South African education.

The interest of this valuable report has by no means been exhausted by what has already been said. Mr. Sargant strongly advocates the foundation of settlements in South Africa and all the British Colonies from the great collegiate foundations in England, including the great public schools as well as the chief colleges of Oxford and Cambridge. He thinks that this would counteract the drift back to Great Britain of the wealthier and more influential Colonial families. This scheme, which he thinks complementary rather than antagonistic to Mr. Rhodes' bequest, has received serious consideration from the governors of Winchester College. On the functions of School Inspectors and their relation to headmasters he has some interesting remarks holding that the Inspector is like the admiral of a fleet, and must set the course for headmasters and enforce obedience, but is not to examine minutely the organisation and promotion of each school and scholar. He attributes the mechanical nature of the teaching in English elementary schools during the "eighties" to an error in this respect. Lastly, in the appendices—by far the largest portion of the book—he has collected a mass of material of very varied interest in which teachers of every kind and country will find something of value. Of particular importance is the tabular statement, showing the control of schools in the different self-governing colonies of the British Empire, with special reference to cost and arrangements for religious education. Here will be found some materials for that consideration of the education of the British Empire as a whole, the importance of which was urged at the beginning of this article.

In conclusion, it must be noted that Mr. Sargant's report is published by Messrs. Longmans, Green & Co. at 2*s.* 6*d.* nett, and that the proceeds of its sale will be devoted to the Transvaal and Orange River Colony Teachers' Benevolent Fund.

PUBLIC INSTRUCTION.

I.—JAIPUR STATE, 1902-03.*

Population.

Males	1,325,009
Females	1,159,063

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* Report by S. Ganguli, Esq.

गुरुकुल कार्यालय

Male scholars, 14,714 or 7·7 of males of school-going age; females, 674 or ·39. Total direct expenditure on Public Instruction, Rs.59,408, or Rs.10-2-4 per head, showing a reduction of Rs.7,795. Indirect expenditure, Rs.31,363.

Collegiate Education.

Colleges, 3; total expenditure, Rs.14,692. Examination results at the Maharaja's College:—

	Appeared.	Passed.
B. A.	6	5
F. A. and Intermediate ...	12	11
Entrance and School Final ...	26	23

In the last, 8 passed in the first division, a record for any school or college in the Allahabad University.

Secondary Education.

Schools, 16 (one private); scholars, 2,855, expenditure, Rs.37,883.

Primary Education.

Schools, 34; scholars, 2,263; private schools, 26; scholars, 1,224; expenditure, Rs.11,539.

The buildings and accommodation are noted as unsatisfactory. A proposal for the imposition of local rates on land assessment, in order to open circle schools, is said to be before the Council.

Female Education.

Has made little progress: 7 State Girls' Schools with 644 girls (an increase of 16 girls): all the schools are in the city of Jaipur. Expenditure, Rs.6,986.

Special Education.

A School of Arts with 97 pupils, costing Rs.5,159; a painting school of 30 pupils, attached to a private photographic business; and a Rajput School for sons of nobles with 32 pupils, an average daily attendance of 12, and an expenditure of Rs.3,431.

II.—GWALIOR STATE, 1902-03.*

Population.

Males	1,538,858
Females	1,394,143

Total number of scholars 19,754 or 8·05 of males of school-going age and ·0547 of females. Expenditure, Rs.2,44,778.

Collegiate Education.

Colleges, 2; scholars, 148; expenditure, Rs.41,695. Examination results:—

	Appeared.	Passed.
B. A.	14	7
B. Sc.	1	1
F. A.	32	25
Entrance	26	18

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* Report of J. W. D. Johnstone, Esq., Inspector-General of Education.

An Engineering class to train students for subordinate posts in the Public Works Department was opened in connection with the Victoria College in July 1902. An engineering workshop is nearly finished. The new building of the Madho College, Ujjain, was opened, April 1902. It has a well-equipped gymnasium and "can compete on almost equal terms with the Victoria College both in scholarships and athletics."

Secondary Education.

Schools, 24; Scholars, 5,752; expenditure, Rs.56,292.

Primary Education.

Schools, 356 (increase of 15); scholars, 13,596; an increase of about 1,523, due to the return of agricultural prosperity. To meet it 43 additional teachers have been appointed.

Female Education.

Schools, 11; girls, 1,121. "Steady progress is apparent."

Special Schools.

Schools, 6; scholars, 258. "The abolition of the miniature Subat at Susera was decided on because of the limited amount of work and experience derivable from the charge of a single village." Eight pupils of the Sardar's School were selected by examination to undergo training in various departments of the State. A Cadet Corps was formed to act as escort to the Duke of Connaught, and "entrance to it will be an object of ambition to all pupils of the school."

III.—HYDERABAD ASSIGNED DISTRICTS, 1902-03.*

Population.

Males	1,394,300
Females	1,359,716

Male Scholars 50,600 or 24·3 of males of school-going age; females, 2,921, or 1·4. Total expenditure on Public Instruction Rs.5,15,437. Government, Municipal, and private schools show a decrease of pupils, attributed to plague.

University Education.

There were ten Berar scholars studying for the B. A. in the Bombay Colleges.

Secondary Education.

Schools, 26; pupils, 3,947, a decrease of 447, attributed to plague in three districts. Expenditure, Rs.84,811, an increase of Rs.13,085, partly due to the strengthening of staffs in high and middle schools. "The results of the examinations in the middle class schools and the lower classes of the two Government high schools are not satisfactory, but the results of the Bombay Matriculation Examination show considerable improvement."

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* Report by C. H. Candy, Esq., Director of Public Instruction.

Primary Education.

Schools, 616; pupils, 38,281; a decrease of 21 schools. Expenditure Rs.2,22,213; the cost of the education of a boy fell from Rs.6-8-0 to Rs.6-3-11. The financial condition of the majority of District Boards is so much strained by famine and plague that they cannot do much work with the funds at their disposal. The percentage of passes rose from 60·7 to 62·5. Some dissatisfaction has been expressed with the teaching in the English classes in primary schools, which are maintained by subscriptions from the villagers. But the Commissioner thinks that signs of improvement justify their existence and that the demand for English instruction should be encouraged, for "the advantages of an English education will be greater every year as people have to turn more and more for a living to occupations outside agriculture."

Special Education.

A female training class was added to the Municipal Girls' School at Akola in April 1902, but is said to be still in the experimental stage. A scheme has been submitted to the Resident for enabling successful trained teachers to rise to the Rs.50 grade instead of Rs.35. Another scheme has been submitted to Government for establishing an industrial school in connection with the Victoria Memorial Fund and furnishing it with the necessary plant and machinery which is wanting in the present Government school at Amraoti.

Female Education.

Primary schools for girls have decreased by two, the number of girls is about stationary.

Muhammadan Schools.

There was a decrease of 115 in the number of boys ascribed to plague. The number of passes was considerably reduced. There were, however, 45 Muhammadans studying in three high schools, and two passed the Matriculation Examination.

THE NEWS OF THE MONTH.

BENGAL.

THE Senate of the Calcutta University met on December 17th to elect a Provisional Syndicate to conduct the executive business of the University, until the Syndicate has been constituted under the University Act. The following ten were elected:—By the *Faculty of Arts*: The Rev. A. B. Wann, the Rev. E. M. Wheeler, Mr. Charles Russell. *Science*: Mr. G. W. Küchler, Mr. W. H. Arden Wood. *Law*: Mr. Justice Asutosh Mukerji, Mr. Justice Saroda Churn Mitter. *Medicine*: Major F. J. Drury, I.M.S., Lieut.-Colonel G. F. A. Harris, I.M.S. *Engineering*: Mr. A. Macdonell. It is noteworthy that except the two syndics in Law, all are Europeans and two of the three syndics in Arts are Clergymen. The exclusion of natives of India from all but one Faculty, is a matter for legitimate complaint on the part of India, and for regret on the part of Europeans. The Universities Act was not intended to destroy, or even largely curtail the influence of native opinion, and the absence of that opinion will seriously impair the efficiency of the Syndicate. It is, however, a curious commentary on the loud and prolonged outcry against the Chancellor's *nominations*, that *election* should have produced this result.

The Resolution of the local Government, on the Report on Public Instruction for 1903—1904, calls attention to the more rapid progress of female education in that period, and attaches great importance to the opening of training classes, to enable the wives of school-masters, and Hindu and Mahomedan widows, to qualify as teachers, and the offer of stipends to those who undertake the course of training. It also approves the extension of the system of appointing zenana teachers, and allowing girls who obtain Primary or Middle scholarships to retain them even if they do not attend school, provided they study under suitable teachers. It announces the sanction of a scheme for devoloping indigenous Mahomedan Primary schools. It endorses the Director's comments on the unsatisfactory results at the Colleges of the University examinations, and the extraordinary badness of those of the B. A. examination; also on the deterioration of secondary schools as shown in the results of the entrance examinations; but it does not accept the Director's view, that this deterioration is due to a deterioration in the qualifications of High School Teachers. The scheme for establishing schools for instruction in the best and latest methods of cotton, silk, and wool weaving, and for a general primary education, and teaching in drawing and designing, is spoken of with approval. The addition of forty-four training schools providing a two years' course for teachers in primary schools, is mentioned as a great step in advance. The inadequate accommodation and supervision of the existing hostels is alluded to; lastly, district officers are urged to co-operate more actively in the work of education.

The usual number of Prize Distributions occurred in December. The Lieutenant-Governor gave away the prizes at St. Xavier's College after witnessing the performance of a drama called "The Gondolier of Death." Sir Andrew Fraser, in his address, spoke of the moral influence upon students of their life at home, and in the hostel.

At a meeting of the Calcutta Students' Hostel and Mess Committee, on January 6th, the D. P. I. presiding, it was decided to accept the recommendation of the Sub-Committee to the effect that, in the event of Government's renting houses to colleges, it should assign them at a rent-charge per head, for each "seat" occupied, such rent to approximate to the average amount students now pay, or roughly Rs.3-8 each, monthly. A Committee was appointed, to report upon the existing hostels and as to the practicability of licensing them. It was also decided to recommend Government to appoint an officer of high standing to draw up regulations, select and assign houses, and generally to supervise the inauguration of the new system, and Mr. L. Tipping, who has throughout taken a prominent part in the movement for the better housing of Calcutta students, was nominated for this purpose.

The Association for the advancement of Scientific and Industrial Education lately appointed a Special Committee for the selection of candidates for scholarships. The Report shows, that there were 89 applicants, including some of the cleverest graduates of the University. Of these the Committee has chosen fifteen, who are recommended for scholarships ranging in value from Rs.25 to Rs.125 a month. It is proposed to send two successful candidates to Edinburgh and Germany for instruction in manufacturing chemistry; one to America for agricultural education; one to Newcastle or Edinburgh for mining and electrical engineering, and others to Japan and England for instruction in various branches of technical training.

Mr. C. H. Browning is appointed to be Principal of the Dacca College, *vice* Dr. Prasanna Kumar Roy.

Dr. Prasanna Kumar Roy, Principal, Dacca College, is appointed to be a Professor in the Presidency College, and to act as Principal of the latter institution during the absence, on leave, of Mr. A. C. Edwards.

Mr. V. H. Jackson, Professor, Presidency College, is appointed to act temporarily as a Professor in the Civil Engineering College, Sibpur.

BOMBAY.

Meetings of the new Fellows of the Senate were held on January 16th, 17th, and 18th, to elect provisional Syndics. Major W. V. Scudamore was elected Syndic in Engineering, the Rev. F. Dreckmann, S.J., Principal Macmillan, and Professors Sharp and Masani were elected Syndics in Arts, Colonel Dimmock in Medicine, Principal Ganpat S. Rao and the Hon. Mr. Justice Chandavarkar in Law.

The regulations of the Chancellor for the election of the provisional Syndicate have provoked much criticism. In the columns of the *Times of India*, Mr. C. H. Setalvad, Mr. Padhye, and others have argued that while under the old system the Fellows could vote or be elected for any Faculty and even for more than one Faculty, under the new rules Fellows are arbitrarily distributed amongst the faculties, and allowed to vote or stand for one only. They point out that this deprives the Arts Faculty of many men who, though they have a degree in Arts, and are qualified to administer that Faculty, yet, because they have also a law degree, are restricted to the Law Faculty. They urge that practically this results in the possibility of electing as Syndic in Arts Professors of Colleges only. From protests in the newspapers they have gone further to get counsel's opinion and have published opinions of Mr. Inverarity and Mr. Lowndes, that the appointment of the whole of the provisional Syndicate vested in the whole body corporate of the University, *i.e.*, the Senate as a whole, and that the Chancellor had no power to regulate the election in the manner he did, and that the whole Notification is *ultra vires*. A formal protest was lodged with the Registrar of the University, but did not avail to postpone the elections.

At the meeting of the National Social Conference held on December 30th, His Highness the Gaekwar and the Hon. Mr. Justice Chandavarkar both dwelt upon the importance of female education to social reform. The latter quoted the Government's Educational Resolution to the effect that a greater proportional impulse is imparted to the educational and moral tone of the people through female education, than by the education of the men. He also alluded to the efforts of the Bengal Government (mentioned above), and to Mrs. Annie Besant's "Pathshala" for girls at Benares.

Prize distributions took place at various schools. At the Bombay Scottish Orphanage Sir James Monteath congratulated the Society on the prosperity of the Orphanage, condoled with them on the loss of their matron, Mrs. Philips, and congratulated the head-master Mr. Anderson and Miss Edge on their approaching marriage. The Hon. Mr. Edgerley congratulated the Cathedral High Schools on their efficiency, and sketched the reforms which were proposed for European schools. The Bishop of Bombay presided at the prize-giving at the Byculla Schools, and in his address commended the head-master's cordial recognition of the work of his assistants, and the improvement of the Girls' School.

His Excellency the Governor laid the foundation-stone of the Nava Vidyahya High School at Hyderabad, Sind.

The Secretary of State for India has sanctioned the proposal of the Government of India to create in the Indian Educational Service, the post of Inspector for European Schools in the Bombay Presidency and the Central Provinces.

BURMAH.

The quarterly meeting of the Educational Syndicate was held on December 17th. It was announced that the transfer of the Rangoon College to Government had been effected in November. The Principal and Senior Lecturer are recognised as members of the Indian Educational Service. The pay of the post of English lecturer has been raised to Rs.500—700, and a lecturer has been appointed. The Executive Committee have recommended a substantial increase in the college staff and have expressed their high appreciation of the management of the college by [illegible] Marshall, the Principal, and of the work of his colleagues. The Committee expressed their opinion that it was desirable to abolish the clerkship examination and to prescribe definite educational standards of qualification for clerkships of several grades: the seventh standard (Vernacular or not Anglo-Vernacular) for clerkships on pay up to Rs.50 per month; the entrance examination for those on pay below Rs.100 and above Rs.50; and a University qualification for those on pay above Rs.100 a month.

A public meeting was held at Rangoon in connection with the deputation from Aligarh to raise money for the Syed Ahmad Memorial Fund, and an address on Mahomedan education given by Nawab Mohsin-ul-Mulk Bahadur.

At a meeting of the Rangoon Teachers' Association the Rev. Dr. St. John delivered an address on "The Nature of the Teachers' Task."

Prize distributions were held at the Rangoon Baptist College; at St. Paul's High School, where the Lieutenant-Governor said that the only criticism he had to make, was that the education was too exclusively general and literary, and that it was desirable to educate boys, not merely to become office and Government clerks, but also for the professions and for commerce; lastly at the Bible Day School.

The Secretary of State has sanctioned the grant of an allowance of Rs.100 monthly to officers of the Indian Educational Service and to Chaplains when serving in Burma, in cases in which their pay does not exceed Rs.1,000 monthly. The appointment of the Bishop of Rangoon is specially included in the grant; that of the Principal of the Rangoon College is excluded in view of the local allowance already given.

CEYLON.

The work of the recently formed Ceylon Agricultural Society is being considerably helped by the school gardens, whose Superintendent, Mr. C. Drieberg, has issued several leaflets full of information on agricultural subjects. The latest is on Ceylon grasses. An effort is to be made to interest school-boys in the study of these grasses, and directions are given for collecting specimens and recording facts about them in all parts of the Island. Fifteen prizes amounting to Rs.120, in total value, are offered for the best collections during the present year.

St. Joseph's College, Colombo, held its distribution of prizes last month. In his report the Rector strongly condemned the Cambridge Local Examinations as encouraging a passion for cramming, and held up the London University Examinations as better in this respect. He hoped that Government would be able to arrange for the London B. Sc. Examination being held in Ceylon. The Archbishop of Colombo, who presided, deplored the tendency to indolence which characterised Ceylonese boys, and urged them to transfer to the intellectual field, the earnestness they displayed on the play ground. "Avoid superficialness; be not satisfied with learning merely by heart facts and words, but make your intellect work, and strengthen, and sharpen it by constant practice."

At the Clifton Girls' High School distribution of prizes, the Chief Justice presided. The Principal suggested that all teachers who have proved their ability by obtaining over 75 per cent. of passes in the Government examinations for three successive years, should be given certificates entitling them to teach in those classes.

The Rev. Mr. Highfield returns to his duties as Principal of Wesley College this year, and he will be heartily welcomed. His "begging tour" is ended, and his last statement showed that he was within Rs.5,000 of the total sum required, that is, of Rs.50,000.

A vote of Rs.25,700 has been passed in the Legislative Council, for supplying the Technical College with fittings and plant. The laboratory will probably be completed this month, and the new buildings will be occupied then.

Through the exertions of the Rev. E. A. Prince, a sick ward has been begun for the Girls' Boarding School at Richmond Hill, Galle. The foundation stones were laid on the 13th December.

The Cambridge Local Examinations last month were taken by 727 candidates, about 100 more than in 1903.

The delay in finally appointing the Elementary Education Commission, and assigning to it its scope of enquiry, is owing to the necessity for appointing a substitute for Mr. Edgar Turner in the Commission. The Chairman of the P. A. is exceedingly busy at present with Planters' Association affairs and could ill-spare the time for attendance at the sittings of the Commission. Its *personnel* so far is—the Hon. Wace (Convener), Mr. J. Harward, D. P. I., Rev. H. Highfield, and Mr. D. B. Jayatilleke.

MADRAS.

From a writer in the *Madras Weekly Mail*, we gather that the Chancellor of the University has instructed the Fellows to vote for eight members of a Provisional Syndicate to whom *ex-officio* are added the Vice-Chancellor and the Director of Public Instruction. The writer argues that this instruction is *ultra vires* inasmuch as formerly the Syndicate consisted of only nine members, including the Vice-Chancellor, and that the Director should only be an *ex-officio* member of the permanent Syndicate.

The last *Gazette* contained a notification by the Registrar rusticating fifty-one candidates for the Madras University Examinations. One of these was a candidate for the M. A. degree, who was permanently debarred from appearing for the examination. It now appears that this man was the examiner of the University in Canarese, but as soon as his offence was reported to the Syndicate, his examinership was cancelled.

The following concessions to native teachers, permitted to attend training institutions, are sanctioned by the Government of India—(1) Teachers sent for training to the Teachers' College and other training institutions under departmental management will be allowed, at the discretion of the Director of Public Instruction, the President of a Local Board, or the Chairman of a Municipal Council, to draw so much pay in addition to their stipend as will raise their total emoluments to Rs. 10 per mensem, while the persons acting for them will also draw a minimum pay of Rs. 10 per mensem. If the pay of the appointment is sufficient, and it is considered expedient to exceed these minima in the case either of the teacher under training or his *locum tenens*, then the teacher under training will be permitted to draw, in addition to his stipend, a portion of the pay of the appointment not exceeding one half, while his *locum tenens* will be permitted to draw a salary not exceeding the remaining portion of the pay of the appointment.

In no case, however, will the total emoluments of any teacher or his *locum tenens*, exceed the permanent pay of the post.

(2) Teachers will be treated while under training as detached from their regular appointments but still in the service.

(3) The period spent under training will qualify for earning increments of salary, but not for earning further leave; it will not cancel the leave already earned.

(4) Travelling allowance will be granted under the Civil Service rules in respect of journeys to and from the training institution.

The first session of the Madras Educational Conference was held on December 22nd. Mr. Eric Drew, Professor of Philosophy in Pachaiyappa's College, read a paper on "The Teaching of Logic to F. A. Classes," in which he advocated the introduction of Logic into the F. A. course. Mr. K. B. Ramanatha Iyer read a paper on "The representation of Teachers in the University Senate." He argued that the number of teachers in the Senate so far from being too large was rather too small;

that Europeans and professional teachers stood little chance of becoming Fellows, unless nominated by Government; and that greater care should be exercised in proposing names for election. For this purpose, canvassing should be restricted, and the Teachers' Guild should give the weight of its influence to two suitable candidates for election. Mr. V. S. Srinivasa Sastriar read a paper on "The Mutual Relations of Teachers and Examiners." He suggested that teachers in high schools should be associated with every Board of Matriculation Examiners to prevent questions outside the course being set (this would almost certainly lead to a leakage of examination questions); that the instructions to assistant examiners should be published; that examiners should report on the results of the examination; and that a holiday course of lectures to teachers should be given by professors and other eminent teachers.

The Teachers' Guild was "At Home" to the delegates to the Conference on December 21st. The President of the Guild drew attention to the failing interest in the Guild, and as a remedy advised that it should be less altruistic and seek more the members' material interests. They should seriously take up the question of teachers' salaries, investigate cases of hardship or unjust treatment, and organise a provident fund for teachers.

At a meeting of the Teachers' Association, Saidapet, Major Elliot, I.M.S., delivered an address on "A Factor in Education." He said that Indian students were too much lectured to, and he wished to see more independence and individuality cultivated. Education should be a part of themselves: not something laid on from outside, like the layers on an oyster's shell but something intercolated through the interstices of the being, like food ingested. There was too much self-complacency, too much memorising, too little learning for the love of learning. Lastly, he strongly urged the value of woman's help and the consequent need of educating women.

At the fourteenth celebration of the Madras Christian College Day, the Chairman, Mr. T. R. Pillay, controverted Mr. Townshend's *dictum* that the European could never understand the Hindu, on the ground that the latter was, at bottom, of the same nature as the former, and urged the necessity of bringing about a closer intercourse. For that purpose he urged on Indian graduates the importance of creating an Indo-European literature and of endeavouring to contribute something, however little, to the available knowledge of India.

At a meeting of the South Indian Mahomedan Association at Cuddalore, on January 4th, a sub-committee was appointed to collect funds for the National Fund. The object of the Fund is to collect Rs. 1,50,000 from Mussalmans all over India, and to devote the income therefrom to promoting higher education by awarding scholarships to deserving Mussalmans.

Mr. E. H. Elliot, who recently retired from the post of Junior Professor of English at the Presidency College, Madras, is reported to have been appointed Principal of the Coimbatore College.

Mr. F. R. Sell, B.A., a son of the Rev. Canon Sell, of Madras, has joined the Central College, Bangalore, as Professor of English.

PUNJAB.

The new Senate of the Punjab University met on December 19th to elect a Provisional Syndicate of fifteen members. The members of the Senate were, for purposes of election, distributed by the Chancellor among the various faculties, the Vice-Chancellor and the Director of Public Instruction alone being able to vote in all six faculties, the others voting for Syndics of their own faculty only. The following were elected:—Messrs. Shah Din, Lala Jiya Ram, Griswold, Robson, Lala Hans Raj, Woolner, Hakim Ali, Hemmy, Shadi Lal, Lala Ruchi Ram, Dr. Ewing, Mr. Justice Chatterjee, Col. Perry, Major Lamont, and Dr. Caleb.

The Chancellor has appointed the Hon. Sir Charles Lewis Tupper, K.C.I.E., Financial Commissioner of the Punjab, to be Vice-Chancellor in place of the Hon. Mr. Justice Chatterjee, who has resigned.

The ceremony of laying the foundation stone of the new University Hall by Sir Charles Rivaz took place on January 4th. The Registrar having read the history of the project and alluded to the assistance which would be given by the local and supreme Governments, this Hall being only one of many buildings for University purposes, Sir Charles Rivaz said that the ceremony marked a very important step forward in the progress and development of the Punjab University Trust. After the Hall had been erected it would be found possible to complete the entire project in contemplation by adding to this central building wings for accommodating the Oriental College and the Law College. Then the University would possess a building worthy of its dignity, and it would be one of the chief architectural ornaments of Lahore.

At the convocation of the University degrees were conferred, and the Vice-Chancellor then delivered an address on the Study of Literature.

In accordance with the Government of India's instructions, the list of authorised text-books for use in Government board and aided schools and Government training institutions is published. The text-books for Government and board schools are absolutely prescribed, and no others may be used. In the case of aided schools it is a condition of receiving a grant-in-aid that no text-book is to be adopted which is not included in the list of text-books authorised by Government. If the manager of an aided school wishes to adopt a text-book not included in the authorised list, he must apply for permission. Government does not prescribe text-books for unaided schools, but it has been ruled that candidates from unaided schools are liable to be excluded from any public examination, for passing which a certificate is given, or from competition for Government scholarships, if text-books disapproved by Government are in use at such schools.

The prize distribution of the Punjab Medical College took place on Friday. The report stated that the working during the past twelve months was satisfactory. There were 614 students against 550 last year, the largest number yet reached. The number is, indeed, inconveniently large, and Colonel Perry, the Principal, thinks it may be advisable to reduce this number somewhat. The most important alteration in the prospectus for 1905 is the substitution of the Entrance Examination in

Arts as a preliminary educational test for the Anglo-Vernacular Middle School examination, which has been abolished by the Punjab University.

Sir Charles Rivaz expressed his satisfaction and promised money for the Chemical and Pathological Laboratories and other rooms required. He congratulated the professors on receiving their well-merited concession as regards pay, and then distributed the prizes.

Sir Mackworth Young, in a lecture on "Progress in the Punjab," said that the advance of education was startling. For three consecutive periods of five years each, ending with 1898, the numbers of graduates in Arts from the province were 101, 196, and 562. And the last report gives 249 as the out-turn of B. A.'s for one year only, so the rate of progress seems likely to be maintained. At the beginning of the decade there were two technical schools in the province, both at Lahore; there are now, besides these, industrial schools for boys at Amritsar, Delhi, and Ludhiana, and for girls at Gujrat; a Hindu Technical Institute at Lahore; clerical and commercial classes at Amritsar, Ludhiana, Hoshiarpur, and Rawalpindi; an engineering class at Lahore, and industrial classes at Clarkabad, Ludhiana, and Lahore. The increase of literary societies was one of the most remarkable indications of the spread of education. The development of athletics was equally striking and of priceless value. There was, moreover, a more wholesome moral tone, more public spirit, more loyalty to the government. The result was that the thinking portion of the Punjab races was never more genuinely attached to British rule than at the present.

THE UNITED PROVINCES.

The Government Resolution on the report on Public Instruction points out an increase in educational expenditure of Rs. 1,10,000, in the number of scholars in primary schools of 10,000, and a considerable increase in the number of girls. The two great objects of education to be emphasised are said to be the improvement of the teaching staff and the introduction of a new and more efficient system of inspection. Doubt is expressed whether inspectorial examinations have not been replaced by oral, and *impromptu* for written examinations. Inspection is said to be too much devoted to examination of individual scholars and too little to testing and finding the system of teaching and management. These remarks seem to have been suggested by the report on the Transvaal. Provision of a short period of training for lower primary vernacular teachers at places near their homes is in contemplation, and an appliction for three more inspectors is to be made.

A valuable address was delivered by Mr. Theodore Morison as President of the Mahomedan Educational Conference at Lucknow on December 27th. The evils they have to deal with were, he said, material poverty and moral and intellectual backwardness, and education was the remedy for both. To meet the former he urged Mahomedans to turn their attention to commerce and industry. He did not mean thereby shopkeeping, but the management and direction of Indian industries. There was room for an enormous industrial development if the crude hand appliances to which the natives clung were replaced by the more skilful instruments of Europe, and there was a great opening for young Mahomedans to attempt this at first in small undertakings. He advocated the formation of a small joint stock company among Mahomedans for starting small industrial concerns which the company could sell to energetic young Mahomedans when established. It would be mainly a philanthropic company with the primary object of giving Mahomedans a fair start, but he thought it would yield good returns. To meet intellectual poverty he advocated a Mahomedan Unversity at Aligarh "which would create a literary class, whose occupation was science, scholarship, and literature, and provide a home and an occupation for them." They should first provide three or four persons for advanced study and teaching of one subject only, *e.g.*, Arabic. Then they could go on to create a Faculty of Science. They should aim at sending Mahomedans to Europe for a complete course of five or six years under the great leaders of thought; these on their return would devote themselves at first to original research.

The Conference was a great success and aroused great enthusiasm. The Fund for the establishment of Science at Aligarh has already reached Rs. 46,000, including the munificent donation of Rs. 35,000 from the Raja of Mahmudabad. Subscriptions for the encouragement of Arabic have reached nearly Rs. 25,000. The Fund for establishing the permanent working and organisation of the Conference, requiring Rs. 2,000, has now realised that amount. A gift was made by the Begum of Bhopal of Rs. 34,000 to Aligarh College for the advancement of female education. The Raja Tasadduk Rasul, of Jahangirabad, proposed the establishment of an Arabic Library at Aligarh, himself subscribing Rs. 20,000 for the purpose. Other subscriptions for the encouragement of Arabic realised Rs. 4,000. Sahibzada Aflab Ahmed Khan proposed that steps be taken to encourage the study of Science at Aligarh. This was supported eloquently by the Nawab Mohsin-ul-mulk and a number of other speakers, and subscriptions for the purpose realised Rs. 11,000. The next day, amidst great enthusiasm, an announcement was made of a munificent donation of Rs. 35,000 for this purpose by the Raja of Mahmudabad. The proposals to raise funds for the permanent work of the Conference, the encouragement of primary education, and the establishment of an educational information bureau, met with an immediate response, the sum required for one year being subscribed on the spot. Aligarh College, the future University of Mahomedans in India, has already benefited by Rs. 1,04,000 as a result of the Conference, showing the practical sympathy which the Mahomedan educational movement has aroused. The Conference ended with a record success, over a lakh of rupees having been subscribed. The gold medal was awarded by the Conference to Sheikh Shahid Hosain, Joint Secretary, for zeal and work in the Conference.

It has been decided to appoint a committee of Indian gentlemen, under the presidency of Rai Bahadur G. N. Chakravarti Sahib, Inspector of Schools, to advise the Government of the United Provinces as to what methods of advancing female education are practicable in these provinces. The Committee will advise the Government whether the day or boarding-school system, or the peripatetic governess system is the better, and will consider the extent to which private effort may be relied upon, the character and conditions of inspection, the curriculum, the joint or separate education of Hindu and Mahomedan girls, the better training of teachers, the methods of recruiting and training peripatetic governesses, and how and to what extent the co-operation of Indian ladies can be enlisted.

GENERAL.

On the occasion of Mr. Herbert Spencer's death last year an Indian gentleman came forward and offered to endow a Herbert Spencer Lectureship at an English University. The same gentleman, Mr. Shymaji Khrisnavarma, wrote to Sir William Wedderburn on the eve of his departure for India, announcing that it was his intention to found five travelling Fellowships, to be called the "Herbert Spencer Indian Fellowships," of the value of Rs. 2,000 each, for enabling Indian graduates to finish their education in England and to qualify themselves for an independent profession. He added that it was also his intention to endow another Fellowship in memory of Dayanada Sarasvati, founder of the Arya Somaj. The undertaking is that two each of these six Fellowships shall be awarded in 1905, 1906, and 1907, and that if at the end of the three years the scheme shall have been proved successful the endowment shall be made perpetual. One of the conditions attached to the proposal is that no Indian graduate holding any one of these Fellowships shall accept any service or emoluments under the British Government after his return to India.—*Statesman, 31st December 1904.*

GEOGRAPHICAL NOTES.

BY

W. H. ARDEN WOOD, M.A., F.R.G.S.

THE small exploring party under Captains Ryder and Wood of the Survey of India Department which was left behind in Tibet on the return of the Tibetan expedition to India has reached Simla in safety.

The surveyors have done work of the greatest geographical importance, within the short space of three months, in the face of great physical difficulties. They have had to cross high passes in snowstorms, and to endure, on more than one occasion, fifty degrees of frost. But it is satisfactory to find that no difficulties were occasioned by the attitude of the people of the country, who throughout manifested the most friendly disposition. Captains Ryder and Wood have brought back with them materials for new maps covering very considerable areas. They have surveyed the course of the Upper Brahmaputra, and solved the mystery of the Mansorawar Lake, long supposed to be the source of the Sutlej. 'As regards the Sutlej it is established that it does not emerge from the Mansorawar Lake, but from the mountains to the west of the Rakhas

Khal. The channel leading from the Mansorawar Lake flows into the Rakhas Khal, from which there is no outlet at all."

* * * *

One of the papers presented at the International Geographic Congress, recently held in America, draws attention to the utility of geography in giving a new interest to groups of historical or economical facts by bringing forward the causal idea behind them. It is pointed out that the mere location of sites of battles, for example, makes a demand upon the memory, but not upon the reasoning power. The pupil may be able to say that certain battles in the American War of Independence were fought at Saratoga and other places in the central part of eastern New York, without knowing the reason why these battles were fought there. This was because these battle-sites are situated on the valley-routes from Lake Ontario and the river St. Lawrence which converge on the Hudson, the great river-highway through the heart of the colonies. The command of this highway was of vital importance, and hence the battles on the routes leading to it. The writer proceeds: "I remember distinctly, when a child of ten years old, studying the dreary list of naval engagements in the war of 1812 between the United States and the United Kingdom, and wondering in my childish mind where all these battles were, and why they were anywhere. If I learned that the conflict between the "Constitution" and the "Guerière" took place south-east of Sable Isle in such longitude and latitude, I was not much wiser, because the significant fact in this location was carefully suppressed, namely, that this battle was fought near the southern entrance to the Gulf of St. Lawrence, where American vessels throughout the war were lurking about to intercept English supply-ships on their way either to the St. Lawrence River and the British forces in Canada, or to the British naval base at Halifax."

* * * *

Another illustration is given from the treatment of Greek history. The geographic factors in the history of Greece receive more attention in school text-books than those of any other country; but only the more obvious influences are discussed: the political sub-division of the country due to the physical sub-division by mountain barriers and arms of the sea; the indented coast-line, the fringing island groups, and the proximity of other lands resulting in the sea-faring and colonising propensities of the early Greeks; the effect of climate, quality of atmosphere, and scenery upon the artistic development of the Greek mind. But other equally important influences are passed unnoticed. The marked colonising tendency of the people was the result also of the restricted territory of the little peninsula, and the limited amount of arable soil in a country of rugged mountains and sterile plateaus. Again, Greece was the part of Europe most accessible to the ancient centres of civilisation in Egypt and southern Asia; upon it converged all the great routes from the East. The Mediterranean and Black Sea termini of every such route were marked by Greek colonies—Trebizond, Sinope, Byzantium, Smyrna, Miletus, Antioch, and Naucratis in the Nile delta. Then, by its position midway between the productive countries of the East and the newly-opened lands of the western Mediterranean, Greece became the great middleman of the early world, the distributing centre of products and ideas, just as twenty centuries later the Hanse towns of the North Sea and the neighbouring

Baltic became the agents of Mediterranean commerce and culture for the less-developed coast regions of northern Europe.

* * * *

The map published in the December number of the *Geographical Journal* to show the systematic nomenclature of the orographical features of England and Wales approved by the Council of the Royal Geographical Society should be in the hands of all teachers of geography. It is beautifully printed, the relief of the land and the depths of the surrounding seas being clearly brought out by the shades of colouring used. The map is identical with the bathy-orographical map which forms Plate I. in the Survey Atlas of England and Wales now being published by Messrs. Bartholomew and Co., and it would be a boon to teachers of geography if this enterprising firm of map publishers could see their way to publish the map separately, together with the admirable explanatory letter-press by Dr. H. R. Mill, at a reasonable price. Dr. Mill's commentary is entitled "The Physical Features of England and Wales in relation to Political and Commercial Development," and in his introduction he says: "It is the causal idea in geography which makes the science rich and full of human interest, and the object of this article is to indicate, in a particular case, the broad lines along which this idea works, and to give such concrete instances as may help the reader to follow them further and apply them more completely."

SCIENCE NOTES.

BY

WILLIAM JESSE, M.A., F[illegible]

THE French paper *La Liberté* recently published an interview with M. Berthelot, when the famous chemist gave some of his views concerning the discovering of radium. M. Berthelot acknowledged at once the importance of Mme. Curie's new element, and said that it opened out new horizons and furnished valuable material for further investigation. He pointed out that the phenomena of radium come under the general category of the phenomena of undulation. A certain number of these phenomena are already known, such as sound, light, heat, and electricity. Science has mastered other phenomena of undulation—those, for example, connected with magnetism, the magnetic needle, the inductions obtained by the solenoids of Ampère, the germ of all the inductions used to-day to produce electric power and light. Phosphorescent phenomena, as well as many others, are due to undulations. The very curious properties of radium, M. Berthelot explained, are not unknown to science. When Becquerel discovered uranium, he recognised in that body all the properties of radium, but a thousand degrees smaller. The new element, due to the joint labours of M. Curie and his wife, acts like a magnet which stores up electric energy, and, by its properties of undulation, produces mechanical phenomena. M. Berthelot gave it as his opinion that any practical application of the new substance is at present somewhat remote.

Replying to a question suggesting that the energy of radium is indefinite and that its manifestations are unaccompanied by loss, M. Berthelot used the following words:—"There is no work without loss, but there are a number of bodies which receive power, store it up, and yield it again. The phenomena of phosphorescence may be instanced. Phosphorus emits luminous undulations, which continue with decreasing intensity, but, to restore its energy, it is sufficient to expose that body anew to the sun in order that it may recover its luminous waves, and regain its phosphorescence. Is not the sun a source of almost indefinite energy? It operates around us in the production of mechanical phenomena, such as electrical storms which destroy our communications and upset our apparatus. Exactly as happens in the case of the magnet, certain bodies may be able to receive solar waves and give up in their turn a portion of the accumulated energy. For my part, I think, we must be on our guard against exaggeration. People have spoken of the upsetting of existing scientific knowledge. There is nothing in all that. The discovery of M. and Mme. Curie is of the highest importance, and no one should underrate it. But, at the same time, we must recognise one fact—the characteristics of radium were already known in other bodies, and they even appear common to all. Some possess them in the high degree in which they are possessed by radium, others only in the slightest degree. But it seems that all bodies are susceptible of receiving waves and of emitting them."

Radium emanations are excellently shown by the "spinthariscope" recently invented by Sir William Crookes. When a piece of nitrate of radium is placed near a blende screen and the latter is examined with a fairly strong lens, of, say, twenty diameters, a few scintillations will be seen, which become brighter and more numerous as the nitrate is brought nearer the screen, until the whole appears a luminous mass. The spinthariscope has been designed to show this in a more convenient manner. It is composed of a brass tube, at one end of which is a small blende screen with a little piece of the nitrate placed at a distance of about a millimeter in front of it, while at the other end is a focussing lens. By this means the lens can be adjusted until the emanating scintillations can be observed to the best advantage.

* * * *

One of the great puzzles of the universe is to account for the source of the sun's heat—heat which has been radiating away into space for millions of years. How is the centre of our solar system able to continue to dissipate this enormous amount of heat, without any apparent means of replenishing its store? According to Helmholtz's theory the sun is shrinking in diameter sixteen inches daily, and has been doing so ever since it was a great gaseous nebula extending over a millionfold greater extent of space. Now the molecules of a body are, while that body is radiating heat, in constant vibration. Should heat accrue from any external source, the vibration will be accelerated, and conversely the more rapid the vibration of the molecules the more heat is given out. Now the falling in of the sun's circumference, due to the daily shrinkage of sixteen inches, may not appear to be very much, but the number of molecules that have to fall this distance is enormously great. Their motion, moreover, is increased by this daily fall. In consequence of this additional velocity, extra heat accrues, and, therefore, says Helmholtz, we may suggest that the waste of the sun's heat by radiation is being made up by the daily shrinkage of the mass.

Sir Robert Ball, however, has recently shown that this ingenious explanation is not entirely satisfactory. Let it be assumed that in shrinking from its nebulous form down to its present dimensions, the sun has given out heat equivalent to about 3,400 times its own mass of coal, and that each coal unit would have lasted about 2,800 years, then, if we seek to find the number of coal units that the sun will have consumed between the time it was a gaseous nebula, and the time when it shall become a solid body as dense as the densest substance known, namely, platinum, we shall discover that it will roughly have consumed about 8,300 coal units. This means that some 24,000,000 years have elapsed. But this period between the sun's gaseous nebulous state and the state in which it will become at least as cold as the earth is now, and cease practically to give out heat at all, is not enough. It is certain, from various independent calculations, that this is too small, and some other source of the sun's heat must be sought. The falling of meteors into the heated mass has been suggested, but Sir Robert Ball by a simple calculation shows that the number of metors, travelling at 400 miles a second (the average speed of a comet), which would have to fall into the sun each day, would, in order to keep up the heat to the required standard, have to be equivalent to the moon in mass. Other things, however, move at a pace compared to which that of meteors and comets is a perfect dawdle. In Nova Persei observers have noticed that parts of space had been reached by some emanations from the central blaze so distant that the rate of motion of those emanations could not have been less than 180,000 miles a second. Dr. Wilson and Professor Kapteyn had hazarded the suggestion that these were light waves lighting up distant spaces of cosmic dust or gaseous nebulæ, but more recently Professor J. J. Thompson, of Cambridge, has shown that the constituents of atoms, "electrified corpuscles" of matter, might move with speeds but little short of this." The energy that matter moving at this speed would possess is something stupendous. A single grain, moving at this velocity, would be able to raise the whole of England's navy from sea-level up to a height roughly equal to that of Pachmari. If in all past time an amount of matter equal to that of the earth had poured from the sun at this speed, the capacity of the solar orb for radiating heat, would be twice what it is.

But Sir Robert points out that there is yet another possible explanation. The sun radiates its heat, not only to the earth, but in all directions. Thus the great nebula in Orion receives heat from the sun, and, as it is some 200,000 times larger than the earth, receives 200,000 times as much. Astronomical telescopes reveal some 120,000 nebulæ, all of which have for ages been giving out heat like the sun, and in all directions. If the nebulæ receive heat from the sun, then it is obvious that the sun receives heat from the nebulæ. In other words, the various incandescent masses of matter in space, suns, stars, and nebulæ all give out to, and receive heat from, one another reciprocally.

* * * *

Professor C. L. Foster, in his report on the mineral resources of the world, states that the total annual output amounts to very nearly eight hundred million tons; of which the British Empire and the United States each contribute some two hundred and seventy million, and

Germany one hundred and sixty million tons. The rapid expansion of the coal industry in Bengal is likely to still further raise the average of the Empire, and it is certain that the mineral resources of this country are not yet tapped of more than a fraction of what they might yield if judiciously exploited. Gold, iron, coal, lead, and silver are all buried in Indian soil. Unfortunately, the people of this country refuse to invest their money in commercial or industrial enterprises, and it cannot be said that the official attitude of Government towards prospectors has hitherto been encouraging. There can be no doubt, however, that when an improvement in these directions has taken place the British Empire will be able to increase its contributions to the world's mineral supply, which at the present moment includes half the gold, one-ninth of the copper and silver, one-eighth of the iron, one-fifth of the lead, and no less than five-eighths of the tin.

* * * *

People of an observant nature have probably wondered at times why certain gales should produce such devastating effects when others, apparently as strong, perhaps stronger, do comparatively slight damage. The explanation seems to be, as Lord Rosse pointed out some time ago in *Nature*, that in many gales the unsteadiness of the pressure is very great. This gives rise to an oscillation, which, when the periodicity of gusts happens to be nearly the same as that of the tree, causes it to succumb. Another curious fact to which Lord Rosse's attention was drawn, when making a study of aërial phenomena, was that in many instances where the whole of a grove had been practically levelled, the few trees that had escaped were on the outside, and chiefly on the side towards the wind. In small groups of three or four trees it was rare for the "weather-side" tree to be overthrown, and single trees, even when perched on a hill-top, usually escaped. It would seem, therefore, that when anything tends to increase the unsteadiness of the blasts, the damage is likely to be increased also, and that, in calculating the force that a building may have to resist, mean pressure and recorded velocity are very misleading guides.

CORRESPONDENCE.

[The following letter appeared in the *Times of India* on January 18th. It deals with an article by Professor Alston in "East and West," similar to that which we published from his pen in our January number, but to which we do not think the epithet "flippant" could be justly applied.]

SIR,

THE University of Bombay is about to review all its rules and regulations, and any serious criticism and well-reasoned suggestion must be welcome to all who are in authority in it. But it is, I think, to be regretted that a gentleman, sent out to fill a temporary vacancy, should after some three months' experience write a flippant article upon the University curriculum, and hold it up to his pupils as an object of ridicule. A reasoned memorial to the Syndicate, urging defects and making suggestions, would, it appears to me, be a more appropriate mode of proceeding for a college tutor.

Professor Alston is guilty of an obvious confusion between the value of a curriculum and the judgment of examiners—two things which have nothing to do with one another. It is notoriously difficult to find examiners in many subjects. The field of exclusion is very narrow. This is inevitable, and the University is not to blame for it. This, however, is a minor matter. Professor Alston's main contention is that in Oxford they teach by subjects, not by single books, that the books suggested are up-to-date, and that students are not only allowed but encouraged to think. In Bombay, he says, we prescribe single books instead of subjects, our books are out of date, and thinking is discouraged. This is a flattering picture of Oxford. I wonder if Professor Alston has ever read Mark Pattison's appreciation of the Oxford system. Pattison says that in Oxford the memory is the only faculty which is called into play, and that even it is charged not with facts but "with generalized formulas, with expressions and solutions which are derived ready-made from the tutor. . . . . The utmost that the student can acquire from the system is that he has learned to write in the newest style of thought and to manipulate the phrases of the last popular treatise." I need not inquire if Pattison is right. At any rate his opinion of Oxford, which he knew, must be considered as valuable as Professor Alston's opinion of Bombay which, if I may say it without offence, he can hardly be said to know.

I have no doubt that some books prescribed by the Syndicate might be improved upon. I know also that the Syndicate are always ready to consider any change that is suggested. But Professor Alston's grievance obviously is that by the books which it has prescribed, the Syndicate has fettered the teacher and bound him down to the exposition of obsolete doctrines. In this I cannot agree with him. If Fawcett is prescribed, it is not meant that the lecturer should confine himself to saying "Fawcett says this—and Fawcett says that." If Professor Alston could listen to the lecture delivered in this College on Political Economy he would be convinced that it is possible to treat it with independence and originality and to combine exposition with appeals to the reasoning faculty of the students. It is easy to stigmatise Fawcett as obsolete. In fact his opinions are still a force in English politics. In any case his book may be used to shew where he failed, why he failed, and where others have gone beyond him. I gather also that Kant is to be condemned as "a single book." This surely is unreasonable. Kant suggests reflection upon all the fundamental questions raised by human experience, and Kant and Mill together may be said to constitute "the subject" of the sufficiency of empirical metaphysics. Kant of course is to be read, and is read, with reference to what produced him, and what he led up to. The same condemnation is also prepared by Professor Alston for Martineau, without reference to his discussions upon Comte and Herbert Spencer. It would be equally absurd to call Bacon's Advancement or Burke's French Revolution "single books" in the sense in which the study of a single book excludes the study of a subject. The truth, of course, is that for teaching purposes the worth of a book is almost entirely what the lecturer can make it: and I am afraid that criticisms such as those of Professor Alston point not so much to a weakness in the system as to inability on his part to use his opportunities.

F. G. S.

REVIEWS OF BOOKS.

BOOKS FOR THE STUDY OF FRENCH.

LET us first state that we do not believe that the following books, however good they may be, will, by their merits alone, teach French o the students any better than the books, good or bad, which have preceded them in the field. It is a fact that no language has ever been learned from books at school, and that grammars, exercises on grammar,

THE EDITOR.

SIR,

I contributed by request an article to the January number of Indian Education, dealing with the Bombay Curriculum in History and Economics. The earlier sections of the article were curtailed by the excision not only of sentences but even of parts of sentences, in such a way as not only to render it exceedingly disjointed in character, but also to affect materially the argument. One of the omitted sentences read as follows:—" Inferior books are admittedly often the best for class use, in that they enable a training to be given in the difficult art of critical reading." The essential point of my whole argument was, not that the prescribed text-books are open to criticism, but that the present system of examinations necessitates the professor's treating inferior text-books *uncritically*.

Such treatment of a signed article seems to me most unwarrantable. As I have no longer the article by me in its original form and can scarcely ask for it to be reprinted with such alterations as would restore its original character, I think I may claim that you insert this letter of protest in your February number.

I am, Sir,
Yours, etc.,
LEONARD ALSTON.

[We very much regret that the excisions of which Mr. Alston complains should have been made. Certain passages were excised by the publisher without our knowledge, after the proof had been passed by Mr. Alston and by us.—*Editor.*]

EXAMPLES IN ALGEBRA. *By Baker and Bourne.*

(G. BELL & SONS. Part I., 1*s.* 6*d.*; Part II., 2*s.*; Parts I. and II., with Answers. 3*s.*)

THE examples are so well chosen that in this respect the book ranks among the first of its kind. A special feature is the number of problems to be solved by graphical methods, though perhaps too much stress is laid upon the use of squared paper. The Revision Papers inserted at various stages and divided into sets are carefully selected.

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1. "*Lectures et mèlanges,*" by W. G. Hartog (Rivingtons, 2*s.* 6*d.*), is an excellent book from every point of view; we must praise especially the beautiful and useful illustrations by Miss Mary Williams.

2. *Heath's Practical French Course, Shorter Course.* By Fraser and Squair. (George G. Harrap, 3*s.* 6*d.*) We fully agree with Mr. W. M. Robertson, M.A., Examiner in Modern Languages for Aberdeen University, whose introduction is written in terms of high praise: ". . . From the very beginning the sentences of the exercises form a dialogue, a description or an easy narrative . . . The syntax, a portion of the work which will undoubtedly command the unqualified admiration of teachers . . . Work invaluable as a book of reference."

3. *Bell's French Course, Part II.*, by R. P. Atherton (1*s.* 6*d.*), deserves a special mention for the interesting reading pieces and illustrations which it contains.

4. "*Les Français d' autrefois.*" By Jetta S. Wolf. (Edward Arnold, 1*s.* 3*d.*) The aim of the book is undoubtedly very good, "teaching something of the French tongue and something of French History at one and the same time." But we cannot commend the book in its present form, as, in glancing rapidly over the sixty-five pages of text which it contains, we have been struck by at least thirty-five mistakes of all kinds.

LOUIS PELTIER.

EASY EXERCISES IN ARITHMETIC. *By W. S. Beard.*

(METHUEN & Co. [illegible] 3*d.*)

THE preface says: "It is desirable to make Arithmetic as attractive as possible, hence the large number of concrete questions." The number of no less concrete than interesting and various examples make the exercises a very suitable book for junior classes.

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MENSURATION FOR BEGINNERS. *By Stevens and Shaw.* (MACMILLAN & CO. *Rs.* 1-8.)

THE principal features of this book are these—(1) The examples are well chosen and suitably classified; (2) Section III., "The Field Book," is especially well worked out; (3) The appendix of Examination Papers increases the usefulness of the book. An index would not be out of place.

NEW SCHOOL ARITHMETIC. *By Ch. Pendlebury and F. E. Robinson.* (G. BELL & SONS. 4*s.* 6*d.* *Part* II., 2*s.* 6*d.*)

NEW SCHOOL EXAMPLES IN ARITHMETIC WITH ANSWERS, 3*s.*

A CAREFUL perusal of the New School Arithmetic shows that it would be difficult to write anything better on the subject. It is excellent in every respect. The publication of the examples and the answers separately will be useful for teachers.

ELEMENTARY COURSE OF MATHEMATICS: ARITHMETIC, ALGEBRA, GEOMETRY. *By Hall and Stevens.* (MACMILLAN & CO. 2*s.* 6*d.*)

THE object of the Elementary Course is to furnish students of evening classes with all that is necessary for their mathematical training. The division of the arithmetical course in weekly lessons is so practical that a similar arrangement in Algebra and Geometry is desirable. The exercises, throughout, are instructive, and most of them bear the stamp of practical utility. The book, written by such experienced authors, well fulfils its main purpose.

LONGMANS' LATIN COURSE, PART III.—ELEMENTARY LATIN PROSE. *By W. H. Spragge.* (LONGMANS, GREEN & CO. 3*s.*)

THIS book presupposes a fair knowledge of Accidence and some practice in turning easy sentences into Latin. It is comprehensive and well arranged; the explanations of rules are brief but simple; the examples, chosen, for the most part, from Latin authors, are well selected. The exercises chiefly consist of short sentences, but generally contain one short piece of easy continuous prose. Special features are short pieces of Latin prose for translation into English and learning by heart, Latin proverbs with their English equivalents, and two appendices on the order of words and the use of prepositions. The book is well suited for the higher classes in secondary schools.

OBJECT-LESSONS IN ELEMENTARY SCIENCE. *By Vincent T. Murchè.* STAGES I. AND II. (MACMILLAN & CO. 2*s. each.*)

THIS is a new and revised edition of a well-known and well-approved book. The following improvements have been made in the new edition:—Lists of suitable objects for illustration are placed at the head of each lesson; white-on-black illustrations have been added for reproduction as black-board sketches; the instructions to teachers are given in italics;

salient points of the lesson are in large black type; each lesson is followed by a summary for children to commit to memory; the connection with the companion Science Readers is indicated at the end of each lesson.

The white-on-black illustrations are excellent, but some of the other pictures are a little blurred. The method of instruction is very full and clear, and has the additional merit of not demanding a large and expensive apparatus. The scheme of lessons is comprehensive, and though the sections on plants and animals are not entirely suited for teaching Indian children (*e.g.*, wall-flower and snap-dragon, the rabbit and many of the kinds of dogs mentioned are not familiar to natives of India), there is sufficient material in the other lessons, and a skilful teacher could probably adapt even these.

MACMILLAN'S NEW GLOBE READERS. PRIMER I. *4d.*

THE series aims at attractiveness, careful gradation, and the "Look-and Say" method of teaching. It fulfils its purpose, and is suited for European children.

BRITISH SONGS FOR BRITISH BOYS. *By S. H. Nicholson.*

(MACMILLAN & Co. *6d.*)

A COLLECTION of one hundred songs for the use of boys in schools and choirs. The songs are classified according to the country of their origin and their subject-matter. Marks of expression are printed to aid the singer. The selection is well made. Mr. Nicholson urges the boys to take an interest in the history and meaning of the words as well as the tunes. He might have encouraged interest in the former by supplying a short note on the origin of the songs which have a history.

SCOTT'S TALISMAN, WITH AN INTRODUCTION AND NOTES.

(MACMILLAN & Co. 2*s.* 6*d.*)

IF Scott's novels are to be edited for school-use, the introduction should, in our opinion, deal at greater length than is here done with the character of Scott's work as a novelist and his position in the history of the development of fiction. The introduction in this edition is almost wholly occupied with Scott's life. The notes are brief but ample, the historical setting and oriental allusions especially being well explained. At the end are Mr. Andrew Lang's notes and editorial notes on the history of the Crusades and the plot and characters of Scott's novel. The note on the characters is good.

BABIES' CLASSICS. *Chosen by Lilia Scott Macdonald.*

(LONGMANS, GREEN & Co. 3*s.*)

A COLLECTION of the best children's poems, culled from Blake, Shakespeare, George MacDonald, Mary Howitt, Ann and Jane Taylor, and others. They vary from the song crooned to the infant to poems that require a well-grown child's mind, but they are all good. The illustrations by Arthur Hughes are beautifully drawn and executed, and are admirably suited to the poems.

PHYSIOGRAPHY. *By T. H. Huxley and R. A. Gregory.* (MACMILLAN & Co. 4s. 6d.)

THIS is a revised edition of Huxley's standard work on the study of Nature. The text has been altered in accordance with the latest discoveries and theories (*e.g.* the description of Argon, Helium, etc.) and with a view of making it useful to a wider class of students. Thus, while the old edition took the basin of the Thames to illustrate the nature of a river bed, the new transfers the description to any river basin, and so makes the chapter more easy of application to any locality. On the other hand, the principle of science teaching laid down by Huxley has been followed, and the student is still led from the familiar facts of daily experience to remoter objects and less readily comprehensible relations. New particulars of maps and map-making are added. Lastly, the illustrations (with six exceptions) are new. They are very numerous and for the most part, especially the diagrams and prints, excellent, but some of the photographs are a little indistinct. This new edition should be widely used in Colleges and secondary schools.

BACON'S ADVANCEMENT OF LEARNING. BOOK I. *By A. S. Cook.* (GINN & Co. 3s. 6d.)

THIS edition was begun before Mr. Selby's edition appeared, and was intended, "to make the meaning of Bacon somewhat more accessible by translating his Latin quotations in the text, the originals being relegated to the foot of the page, and by furnishing quotations in English for the mere citations of Wright." The Introduction is made up of Rawley's Life of Bacon in full, a chronology of Bacon's life and times, and citation of the opinions of a variety of authorities. The notes consist of illustrative quotations, references, and terse explanations of words and phrases. Much is borrowed (with due acknowledgment) from Mr. Wright's and Mr. Selby's editions.

BOOKS RECEIVED.

An Elementary Class-book of Physical Geography. By W. Hughes. Revised by R. A. Gregory. (*George Philip & Son.* 1s. 6d.)

The "Albion" Series of Chalk Drawings. (*George Philip & Son.* 2s. *net.*)

A Scheme for the Detection of the more common classes of Carbon Compounds. By Frank E. Weston. (*Longmans, Green & Co.* 2s.)

The Story of the British Empire for Children. By Francis M. Anderson. (*Methuen & Co.* 2s.)

Elementary Trigonometry. By C. H. P. Mayo. (*Longmans, Green & Co.* 3s. 6d.)

Education and Efficiency. By H. Thiselton Mark. (*George Philip & Son.* 1d. *net.*)

Philip's Secondary School Register. (*George Philip & Son.* 1s. 6d.)

Byron. Selected Poetry. Edited by I. Wight Duff. (*Blackwood & Sons.* 3s. 6d.)

Technological and Scientific Dictionary. Part VI. (*G. Newnes.* 1s. *net.*)

Selected Poems of Elizabeth Barrett Browning. Edited by Elizabeth Lee. (*Ginn & Co.* 1s. 6d.)

Plastic Methods for Plastic Minds. By Mrs. Wm. Harbutt. (*Chapman & Hall.* 1s. *net.*)

How to use Plasticine. (6d.)

The Temple of Art. By E. Newland Smith. (*Longmans, Green & Co.* 3s. 6d.)

Lucian, Charon, and Piscator. Edited by T. R. Mills. (*University Tutorial Press.* 3s. 6d.)

OUR CONTEMPORARIES.

THE November and December numbers of the *Hindustan Review* are published in one number, which is largely devoted to the National Congress. Speeches of Mr. Justice Budruddin Tyabji, the late Hon. Mr. Sayani, and others are quoted to shew the attitude of Mahomedans towards the Congress. The quotation from Mr. Sayani sums up conveniently the grounds of objection to the Congress which are urged by educated Mahomedans. These are that to join the Congress is to join the Hindus, their rivals, to offend against their religion, to give aid to disloyalty, to support impractical and undesirable aims, etc. To these objections, Mr. Sayani made answer that the interests of both Musalmans and Hindus should be indentical, that there is nothing opposed to the Musalman religion in learning English, that there is nothing disloyal in the programme of the Congress, that the Congress has already obtained some concessions from Government, and therefore cannot rightly be called impractical, etc. The late Dr. J. R. Wallace is quoted as urging the opening of the highest appointments to natives of India, and especially to European youths educated in India. There is also a study of Sir Henry Cotton and a review of his *New India*. For the benefit of the Congress visitors to Bombay, there is a lengthy description of the buildings, institutions, inhabitants, and environs of Bombay, compiled out of numerous guide-books, and doubtless useful, though not very well written. More interesting to the educationalist is the article on "Female Education in Bengal," by Pandit S. Sastri. The history of female education is traced from 1817, when David Hare organised a *School Society* and raised quite an enthusiasm in Calcutta for the movement, which lasted for some six years. Then followed a period of depression till 1849, when Mr. Bethune gave the cause fresh life. From 1863 dates the extension of the movement, by attempting to work through the zenanas. In spite of much opposition, of which Mr. Sastri furnishes one humorous case, where a fierce bull-dog was instrumental in cowing the reactionaries, the education of girls has progressed continuously, but very slowly. "The custom still obtains of withdrawing a girl from school at the age of ten, which is considered the marriageable age for them in Bengal . . . . Owing to the low value that social opinion attaches to female education, the schools lack vitality, and are devoid of the usual instruments and apparatus of good education. All that people want in their girls is to be able to say, when an offer of marriage comes, that she attends a school or can read and write. So, nothing more than the merest rudiments of learning is expected from these schools." Mr. Sastri sees salvation in the growing custom of educating girls along with boys in boys' schools.

In the December number of the *School World*, Mr. Fowler continues his consideration of the new regulations in England for the teaching of English Literature in secondary schools. He offers suggestions to the teacher who has to prepare himself for teaching the course, and Mr. Fowler's suggestions are of value to the teacher or student of English in India. A love and appreciation of literature is the first thing he must cultivate, if he does not already possess it. Systematic daily reading of such books as Palgrave's *Golden Treasury* or Mr. Peacock's prose selections in the "World's Classics," are recommended for the acquisition of a knowledge of the characteristics of English literature at various periods, and of a standard of criticism. A knowledge of Greek and Latin literature will contribute even more to attain the latter, and this may easily be acquired in some degree by reading good translations of Homer (*e. g.*, Lang, Leaf and Myer's *Iliad* or Butcher and Lang's *Odyssey*), Sophocles and Euripides (*e. g.*, Jebb's and Way's translations), Plato's Republic (*e. g.*, Jowett's translation or that in the "Golden Treasury"), and Virgil's *Aeneid* (*e. g.*, Conington's translation). For guidance in critical study of individual authors, Mr. Fowler recommends Mathew Arnold's *Essays in Criticism*, Ward's *English Poets*, Craik's *English Prose Selections* and the new edition of Chambers' *Cyclopædia of English Literature*. These four books, we consider, should form the nucleus of every teacher's library and are sufficient by themselves for a start. Mr. Fowler also recommends Prof. Saintsbury's *History of English Literature*. At the outset, we should prefer Mr. Stopford Brooke's *Primer of English Literature*. As helps to a study of the *technique* of prose and verse, he suggests two useful books, Minto's *Manual of English Prose Literature* and Dr. Mayor's *English Metres*. Mr. Fowler concludes by advocating a combination of methods in teaching, the reading of authors on a large scale with a minimum of comment, and, occasionally, the elaborate study of texts or portions of texts. In India the value of the former method needs to be most emphasised.

In the same number, Dr. Rouse writes on Latin spelling. He points out that corruption, confusion and prejudice have retained in Latin books many alternative or erroneous spellings, and that correction has not been applied on any fixed principle. Thus, we find *quum*, *quom*, and *cum*; *jam* and *iam*, *quotidie* and *cottidie*, *projicio*, *proiicio*, and *proicio*. He would have editors regulate their spelling by the practice of the author's time, but in school-books preserve uniformity within a given period. He would keep both *u* and *v*, but he would banish both *uu* and *vv*. He would not relinquish *servos* (nom. sing.) and *tristis* (accus. plur.) because they might cause confusion, but would mark the final syllable for beginners. He advocates the marking of all vowels *naturally* long for the sake of beginners and to save the teacher's time. He urges the importance of early teaching the general rules for "concealed quantity." Dr. Rouse's proposals are valuable, though the reforms which he advocates are difficult to effect, because of the difficulty of arriving at a general agreement of publishers and editors. In America, however, beginners' texts are said to be printed in the manner he advocates.

GOVERNMENT NOTIFICATIONS.

PERMANENT NOTIFICATION.

No. 3197 OF 1902-03.

POONA: OFFICE OF THE
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18*th July* 1902.

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The Educational Department is not responsible for anything which may appear in this publication, unless over official signature.

F. G. SELBY,
Acting Director of Public Instruction.

NOTIFICATION.

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J. G. COVERNTON,
for *Director of Public Instruction.*

NOTIFICATION.

It is hereby notified that the "History of Belgium," by D. C. Boulger, is approved for College and High School Libraries of the Bombay Presidency.

Poona: Office of the
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J. G. COVERNTON,
for *Director of Public Instruction.*

List of appointments, etc., in the Educational Department, from 11th December to the 10th of January 1905.

APPOINTMENTS MADE BY GOVERNMENT.

13th December 1904—Miss A. E. Brooke is appointed to be Lady Superintendent, Mahalaxmi Female Training College, Ahmedabad, *vice* Mrs. F. L. McAfee, retiring.

APPOINTMENTS MADE BY THE DIRECTOR OF PUBLIC INSTRUCTION.

20th December 1904.—Mr. C. V. Pandya, Clerk, Ahmedabad High School, is appointed Clerk in the Surat High School, *vice* Mr. V. C. Khambata, retiring.

23rd December 1904.—Mr. [illegible] K. Marathe, sub *pro tem* 1st Clerk, Poona Training College, is confirmed in his appointment.

5th January 1905.—The following appointments are made in the Male Training College, Ahmedabad:—

Mr. M. A. Pandya, B.A., 2nd Assistant, to be 1st Assistant, *vice* Mr. H. B. Dave, deceased.

Mr. A. R. Desai, P.E., 3rd Assistant, to be 2nd Assistant.

Mr. A. M. Divanji, B.A., S.T.C., 12th and sub *pro tem* 7th Assistant, Elphinstone High Schools Gujarati Side, to be 3rd Assistant as a special case.

7th January 1905.—Dhondu Govind Nivathe is appointed Moulder Mistri in the College of Science on probation.

9th January 1905.—Mr. Fatechand Mangharam is appointed Agricultural Teacher in the Training College, Hyderabad, on probation.

10th January 1905.—The following appointments are made in the Poona [illegible] College:—

Mr. L. B. Pethkar, B.A., S.T.C., 3rd Assistant, to be 3rd Assistant (New Scale).

Mr. S. K. Sathe, B.A., S.T.C., 6th Assistant, Nasik High School, to be 4th Assistant.

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E. GILES,
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3. See notice in *Indian Education* for August 1902, page 55.

R. D. PRIOR,
Educational Inspector, C. D.

Poona, 14th January 1905.

Author.	Title of Work.	Publisher.	Price.
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	CLASS 10A:—*Catalogues, etc.*		
	The Xmas Book-seller	Whitaker ...	0 1 0
	CLASS 14:—*Copy Books, etc.*		
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	CLASS 59:—*Miscellaneous.*		
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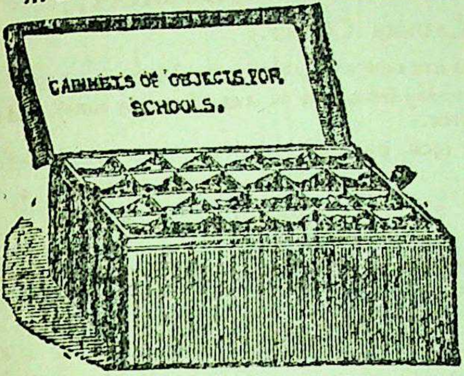
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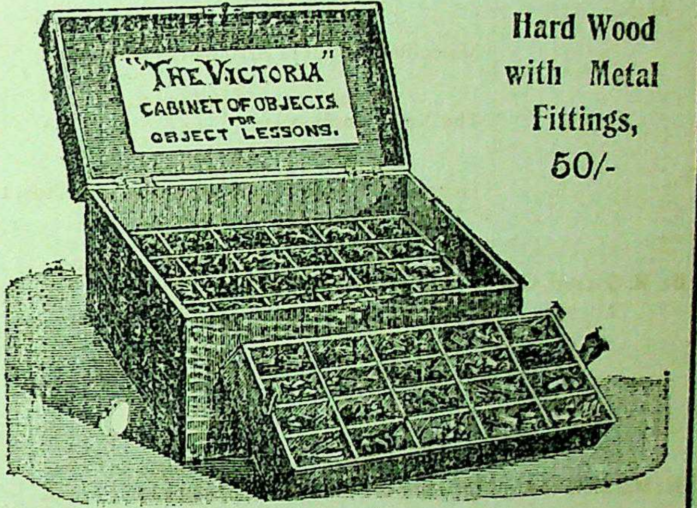
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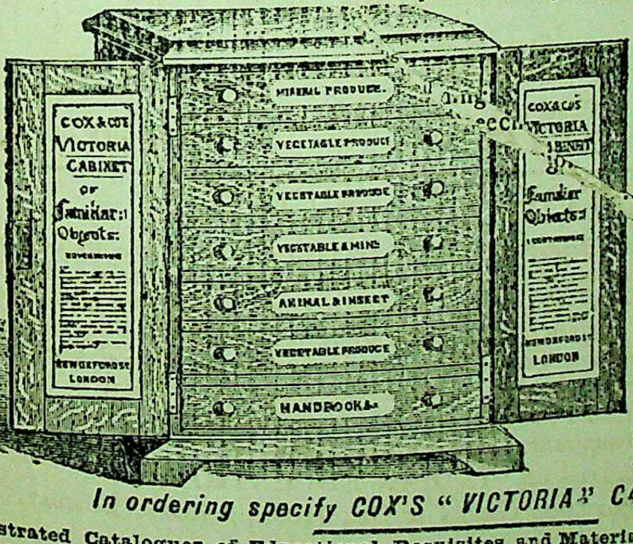
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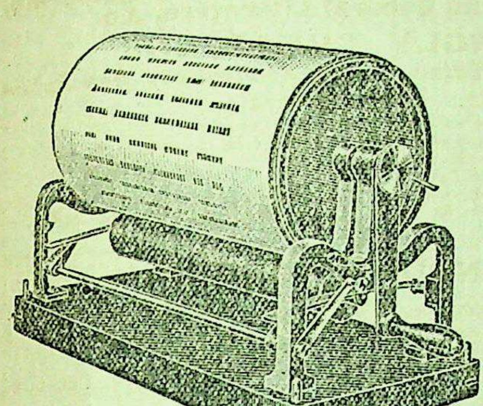

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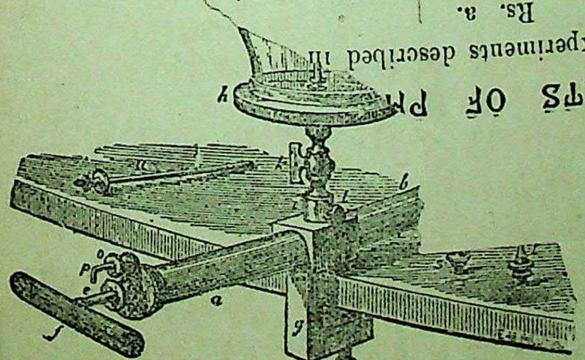

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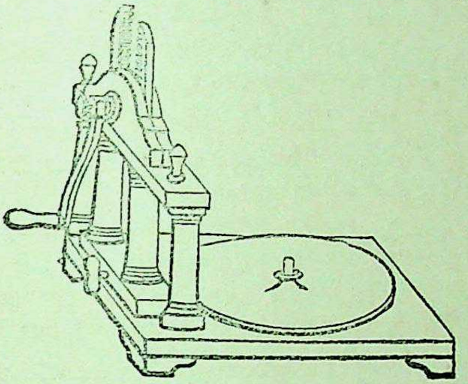

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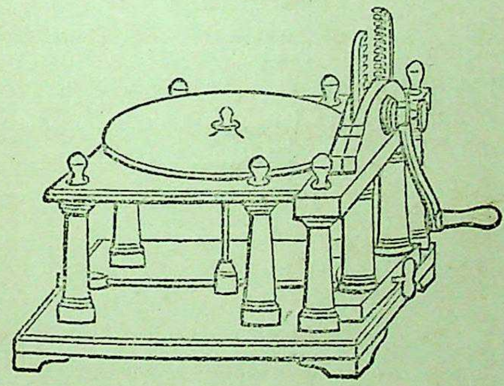

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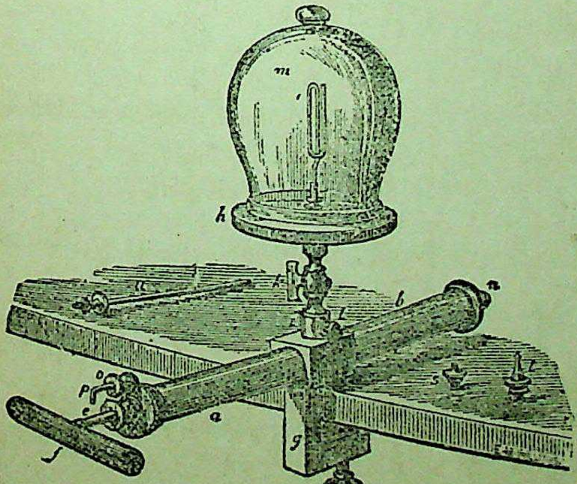

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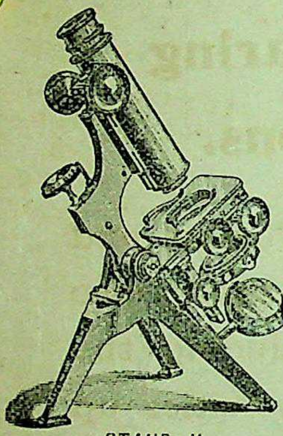

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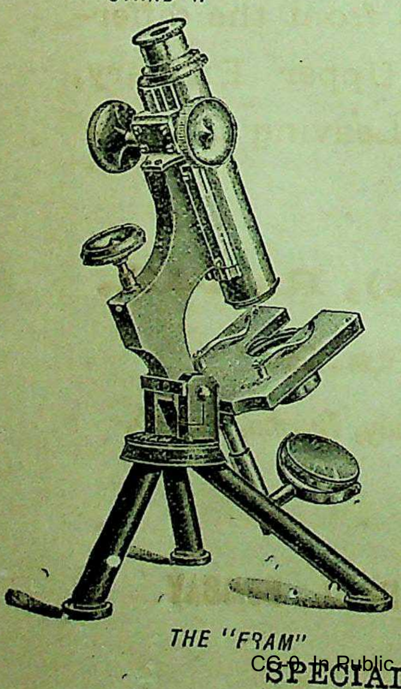

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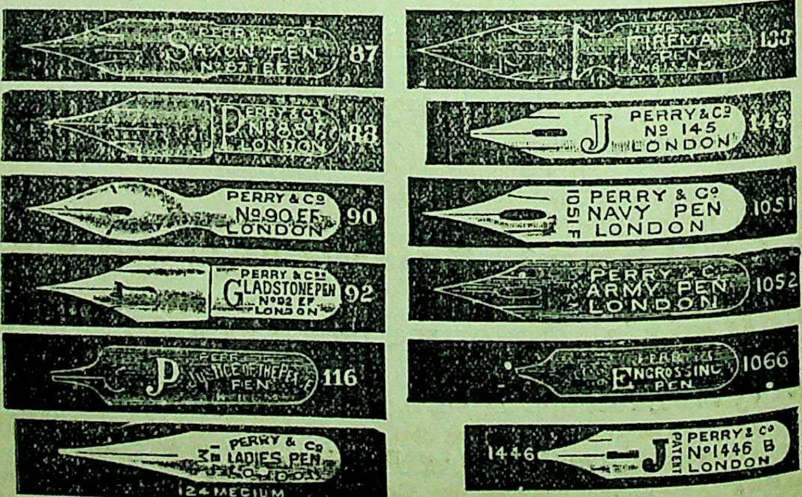
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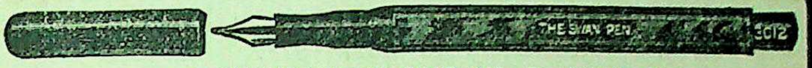

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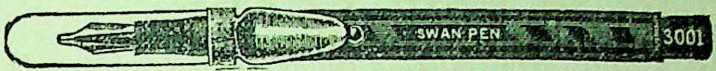

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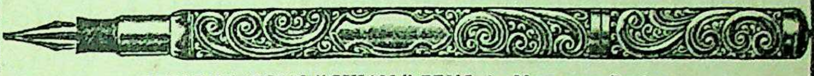

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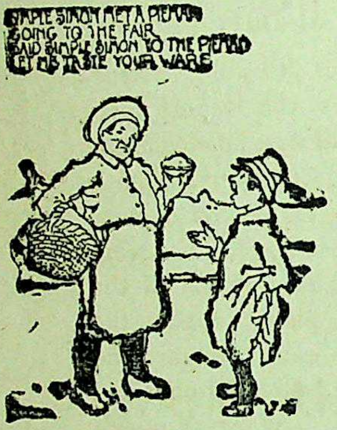
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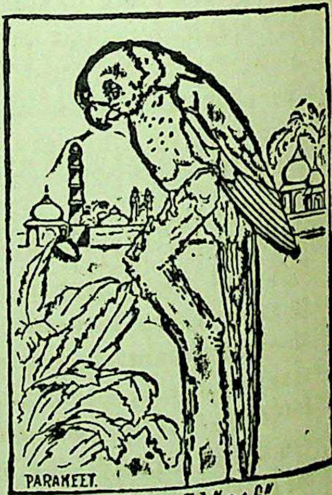

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INDIAN EDUCATION.

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Path to a clear-sighted end,
Path of advance!

VOL. III.] JANUARY, 1905. [NO. 6.

EDITORIAL NOTES.

THE resolution of Government on the Director of Public Instruction's Annual Report has reached us, but not the Report itself, and it is, therefore, not easy to appreciate the full significance of the resolution. It is evident, however, that the progress of education is regarded, on the whole, as satisfactory. The Colleges now show so little signs of the effects of plague that one and all are clamouring for increased accommodation and facilities. The addition of the Telang Wing to the hostel of the Elphinstone College supplies the demand for residence to some extent, though we cannot regard the addition as a very satisfactory fulfilment of the policy emphasized by Lord Curzon in his resolution of last March. The St. Xavier's College are more fortunate in the site which, it seems probable, they will obtain for their much-needed hostel. A hostel, if it is to serve a useful purpose, must be so built and so organised as to promote the physical, moral, and intellectual welfare of the students. It should be in a healthy position, situated so near the College that it may be kept under real supervision by the teachers, one at least of whom ought properly to be in residence, and so constructed that the students may pursue their private studies in the best possible light and the coolest temperature attainable. A hostel is intended to subject the student to a strict moral discipline and to substitute an environment favourable to study for the ill-ventilated, ill-lighted, crowded and noisy rooms which are the usual homes of the poorer students. It is not easy to find in a crowded city like Bombay conditions suitable for a good hostel, and that is one good ground for holding that Colleges should never be built in great cities. In Bombay the Wilson College hostel is by far the most favourably situated, though even that suffers from the want of a playing-ground. The Grant Medical College is worst off, for, with as many students as any other two Colleges put together, it has practically no hostel.

In the matter of College-buildings they have undoubtedly the prior claim on Government.

* * * *

The resolution endorses the Director's remarks on the great importance of improving the teaching staff. The training of teachers is of equal or greater importance in primary education. The delay of the Home Government in finding a suitable Principal for the new Training College is, therefore, very regrettable, though even delay is better than the appointment of an unsuitable man. When this institution is in working order a great step will have been taken to improve the teaching of secondary schools. The teaching power of elementary schools would be greatly enhanced if it were possible to create another Training College for their schoolmasters in Bombay itself. Poor teachers are very unwilling to leave Bomay for Poona or Ahmedabad to obtain the requisite training. Language and finance are the two chief difficulties in the way of such an institution. The next best course is the creation of some kind of training class for elementary teachers. The Joint Schools Committee —now that they have increased funds to draw upon—are contemplating something of this kind, and should not delay in establishing it.

* * * *

While on the subject of the training of teachers, it is worth while noting that a teacher of high repute has been writing letters to the London *Times*, in which, while admitting that there is in England a dearth of good secondary teachers, he argues that the conditions of registration tend further to check the supply, and that " in the judgment of most able and experienced teachers this process of training must always be a comedy, and is at present a farce. " His argument seems to be that no men of capacity and spirit will submit to a year's study of what he calls puerile psychology and the art of using a blackboard, that a University degree is the sole test required, and that the only real training is the actual work of teaching. Now, it is perhaps true that at present head-masters and governing bodies pay attention almost solely to academic distinctions in choosing schoolmasters, but that is only because prejudices still exist, and, granting that the training is of real value, the demand for training secondary teachers is bound to grow. Can anyone fail to see that training is not only valuable but even necessary? Other learned professions require a training. Why should it be necessary for teachers only to learn from their own bitter experience? Teaching, cannot it is true, be reduced to an exact art, and it is most undesirable to fetter it by rigid methods. But the experience of others has shown that there are general principles as well as mere 'tricks of the trade,' the knowledge of which is invaluable.

* * * *

Commenting upon the Director's Report the *Times of India* says:—"Unfortunately the sense of discipline imbibed at the Government Schools is not as common as it should be. No one conversant with Bombay can feel quite satisfied with the manners of a considerable proportion of the youth of school-going age, or feel sure that they are not deteriorating rather than improving." Our own experience leads us to endorse these remarks. The disturbances which took place in the cricket matches between the Parsi and Hindu Gymkhanas last monsoon was evidence that the matter is serious, for these disturbances were, we believe, largely due to school-boys and College students. If two clubs of standing like these cannot control the spectators at their matches, when those spectators are largely composed of boys and young men, then there must be something radically wrong in the discipline not only of school, but home, life. Our personal observation leads us to believe that the Parsi boy is worse behaved than the Hindu, and what we know of the home-life of each confirms this. Now, the cause of these bad manners is to be sought in laxity of discipline not merely at school, but also at homes. Englishmen pride themselves in the discipline of their schools, and probably with justice. It is in order to maintain the English standard of discipline and morals that English head-masters of High Schools are appointed. Yet the exigencies of the Public Service seem always to deprive these schools of their English head-masters. We do not go so far as to suggest that this is the cause of the defect of which we speak, for the Director has spoken well of the High Schools' discipline. But the existence of the defect emphasises the importance of ending the constant changes of head-masters. Something more might be done perhaps by a little extra strictness on the part of Inspectors. But the real remedy, we are convinced, lies rather with the parents than the school-masters. The schools of Bombay are, for the most part, day-schools, and the life at home is the prevailing influence on boys' characters.

* * * *

The remarks of Mr. Stone on the progress of education among the Eurasians of Madras, of which we give a summary in "News of the Month," are provocative of thought. We have not any figures at hand to compare the Bombay Presidency with Madras in respect of this community, but hope to deal with the subject in the future.

It is probable that Eurasians and Europeans will be found to do better in Bombay than in Madras, if we include Portuguese under this head. But whether that be so or not, they cannot be said to show many signs of intellectual or commercial activity. The cause of this is, doubtless, to be sought partly in physical degeneration, but that does not sufficiently account for it, and other reasons must be sought in the condition of their schools, a subject too large to be entered on.

EDUCATION IN ENGLAND.

At Oxford, the first batch of the Rhodes' scholars are now in residence, and the scheme may be regarded as practically in full working order. The total number of Rhodes' scholars in residence is 71, and they are distributed over 17 colleges. Mr. F. J. Wylie, Fellow of Brasenose, has been placed in special charge of the scholars; and in a speech made at Oxford a few days ago, Lord Rosebery spoke in warm terms of his high qualifications for the task. All over the Empire and in the United States Mr. Rhodes' idea has been cordially taken up. The success with which manifold practical difficulties have been overcome is largely due to the energy and enthusiasm of Dr. G. R. Parkin, who has travelled all over the English-speaking world in order to confer with educational authorities on the subject of the Rhodes' bequest and to make arrangements for the selection of the scholars. It would have been impossible to find anyone more eminently fitted for this duty than Dr. Parkin, who for many years has been one of the missionaries of the Imperial idea, and is closely acquainted with the educational, as well as with the political, aspects of the problem. The chief difficulty which has arisen in giving practical effect to Mr. Rhodes' plan has lain in the question of the age at which the scholars should come into residence at Oxford. It is pretty clear that, so far as he considered the matter at all, Mr. Rhodes expected that his scholars would go to Oxford for the ordinary undergraduate course. In America, however, and in many of the Colonies, the weight of academic opinion was in favour of sending the scholars to Oxford after they had taken their degrees at universities nearer their own homes. The Trustees have decided that as, owing to Mr. Rhodes' premature death, his will was, in Mr. Hawkesley's words, "a first-edition will", they were justified in giving a liberal interpretation to it, and in allowing considerable freedom of action to those charged with the duty of selecting the scholars in the different parts of the English-speaking world. It remains to be seen how far the organisation of studies at the University of Oxford can be adapted to meet the very different needs of the various scholars who are now going to it under Mr. Rhodes' will. An undergraduate's work at Oxford is almost invariably planned in view of the existing examinations. As compared with the state of things at the greater number of American universities, graduate studies under professional guidance play a relatively small part in the Oxford programme of work. There is no reason to fear, however, that the educational difficulties inherent in Mr. Rhodes' scheme will not be successfully overcome through the goodwill and forbearance of all concerned. In the meantime, what may be called the political significance of Mr. Rhodes' idea has produced no small impression upon national opinion.

* * * *

Some light is thrown on the educational difficulty with which the Rhodes' Trustees have to contend, by the recent inaugural lecture delivered by Mr. C. H. Firth, Regius Professor of Modern History at Oxford. He began by saying that the teaching of history should mean an endeavour to train men capable of adding to our historical knowledge. Much had still to be done in every department of English history. In England the publication of materials had out-stripped the capacity of historical workmen to utilise them. If the story of England was ever to be rightly told, the work needed the co-operation of many skilled hands. In order to become a skilful historian the student must first lay a foundation of general knowledge and then concentrate his efforts upon some definite and limited field. But Professor Firth pointed out very little was being done in Oxford to train men for historical work. And yet the Modern History School at Oxford has never been so large and so flourishing as it is to-day. He estimated that between four and five hundred students were reading for it. But the Oxford Modern History School had produced few historians and few genuine students of history. In carefully examining the Class Lists for the last twenty years, he had been surprised to find how rarely one came across the name of a man who had subsequently published historical work of any kind. An historian, he said, seemed to be merely an accidental bye-product of the Modern History School, and not one of the natural results of their elaborate system of teaching. One answer made to this complaint was that the teaching of the Modern History School was not to produce trained historians, but to give a sort of general education through history. Professor Firth admitted that from this point of view the Oxford Modern History School performed a useful function, and that it produced well-informed politicians and journalists, good civil servants, and many useful persons in other spheres. But if this view were taken of the functions of the School, then the training which it gave was conceived on too narrow lines. Though English history and English literature were inseparably connected with each other, the latter was practically not studied at all by those who were reading for the Modern History School. Again, the social and economic history of England was unduly neglected. Thirdly, the plan of studies of the School, instead of stopping short in 1837, should include the history of the British Empire during the nineteenth century. Thus Professor Firth presented a dilemma to his hearers. If the Oxford School of Modern History is intended to give a general training to young men who intend to devote themselves to political, administrative or journalistic work, the curriculum of studies should be widened accordingly. If, on the other hand, the aim of the School is to produce trained historians, much more should be done to train the students for the work of skilled historical research. "In some way or other, a piece of historical work done under the normal conditions of historical work should form part of a man's training in the Modern History School and should have a share in the final estimate formed of his merit."

Like Professor Percy Gardner, Professor Firth is thus pressing upon the thought of the University the need for some reconsideration of its present educational methods and aims. We have been thinking too little in England of what we want to produce by means of our secondary and higher education. In schools and universities alike, we have fixed our attention too exclusively on the fact of passing examinations, as though the passing of an examination were an end in itself. We have salved our consciences by the assumption, not always warranted by facts, that a student who is clever enough and industrious enough and business-like enough to pass an examination with credit, will be likely to attain success in practical life by continuing to display the same qualities. We have done too little to encourage the love of learning for its own sake. The task of preparing students for examinations has diverted too much of the thought and energy of many of the teachers from some of the more difficult and important problems of real education. What is really wanted in English education is not a mere change in organisation but a new spirit. So complex is the structure of our educational system, and so heavily does it press upon the efforts of all concerned, that it will be extremely difficult for the new spirit to assert itself and to triumph over the difficulties placed in its way by our present habit of regarding examination successes as the touchstone of educational skill, if not of intellectual excellence.

* * * * *

The Statute for the remission of Greek in Responsions at Oxford, which has been prepared in accordance with resolutions carried by two votes in February last, will be voted upon at Oxford towards the end of the present term. The draft statute proposes that responsions should consist of two alternative groups; of these, one will be as at present, the other will allow French or German instead of Greek. The second, or Greekless, group will only be open to candidates who intend to read for Honours in Science or Mathematics.

At Cambridge, a report has been issued by the Syndicate appointed last November to consider what changes, if any, are desirable in the studies, teaching and examinations of the University. This first Report of the Syndicate is confined to proposals for amending the Regulations for the Previous Examination. The Syndicate consisted of thirteen members, all of whom, with three exceptions, signed the Report. It is proposed that the Previous Examination should be divided into three parts, all of which must be taken, not necessarily at the same time, by all candidates for a degree, except in so far as they have obtained exemption from one or more of the parts. Part I. would consist of languages, ancient and modern. Part II. would consist of the mathematical subjects now required, the paper on Paley's Evidences being discontinued. Part III. would consist of one compulsory subject (English Composition) and several alternatives.

It is in respect of Part I. that the battle will chiefly rage. The Syndics believe " that the serious study of the ancient classical languages is invaluable and provides a mental training which can hardly be secured in any other way." They hold, however, that this object can be attained by the study of either Latin or Greek, more especially if the standard of proficiency in each language is somewhat raised. It is proposed therefore that Part I. of the Examination should comprise eight papers, two devoted to each of the following languages,—Latin, Greek, French, and German. Each candidate would be required to take both papers in each of two of these languages, one of the two languages being either Latin or Greek. It will be observed that this makes either Greek or Latin optional. But it is also provided that, if he wished to do so, a candidate should be allowed to take one paper in French and one in German, instead of two papers in either. The detailed description of the eight papers is as follows:—

(*a*) A paper containing easy unprepared passages of Latin for translation into English, the use of a dictionary being allowed.

(*b*) A paper containing questions on Latin accidence and syntax, together with one or more easy passages of English for translation into Latin.

(*c*) A paper containing easy unprepared passages of Greek for translation into English, the use of a dictionary being allowed.

(*d*) A paper containing questions on Greek accidence and syntax, together with short English sentences for translation into Greek.

(*e*) A paper containing easy unprepared passages from standard French authors, not earlier than the year 1600, for translation into English.

(*f*) A paper containing a passage of English for translation into French, and a subject for original composition in the French language, candidates being allowed a choice between the two.

(*g*) A paper containing easy unprepared passages from standard German authors, not earlier than the year 1750, for translation into English.

(*h*) A paper containing a passage of English for translation into German, and a subject for original composition in the German language, candidates being allowed a choice between the two.

It is proposed that in Part II. there should be three papers, one in arithmetic, one in algebra and one in geometry. Candidates would be required to take all three. Part III. would consist of five papers as follows:—

(*a*) A paper containing exercises in English composition, including subjects for an English essay, some of the subjects for the essay to be taken from a selected standard English work or works.

(*b*) A paper on one of the Synoptic Gospels, together with the Acts of the Apostles in English.

(c) A paper containing questions on the outlines of English history divided into periods as prescribed from time to time, candidates to take questions on any one of the periods.

(d) A paper on experimental mechanics and other parts of elementary physics.

(e) A paper on elementary inorganic chemistry.

Of these five papers each candidate would be required to take the first and two of the others. This makes the paper in English Composition compulsory, but the papers in Natural Science optional. The proposals of the Syndicate seem judicious and moderate. But they are likely to excite a great deal of controversy.

* * * *

There has hitherto been in the University of Oxford no organized provision for the teaching of British Colonial History. The subject has been admirably treated by many of the University extension lecturers in all parts of the country, but, curiously enough, in Oxford itself this branch of British history has not hitherto received official recognition. The subject is not even specifically included as an alternative special subject in the curriculum of the Modern History School. Happily this defect is now to be remedied. Mr. Alfred Beit has offered to establish a professorship of Colonial History at Oxford, and his offer has been accepted by the University. Mr. Beit desires "to promote a greater interest in, and a more accurate knowledge of, this particular branch of British history amongst the students of the University, more especially amongst those who under the provisions of Mr. Rhodes' will come to Oxford from all parts of the Empire." For the next seven years he will contribute the annual sum of £ 1,310: (1) for the maintenance of a resident Professor of Colonial History together with assistant lecturers in the subject; (2) for the establishment of an annual prize of £50 for an essay on the Advantages of Imperial Citizenship; and (3) for the purchase of books on the subject of Colonial History. If after the expiration of seven years, the University authorities decide that this new department of historical study has been justified by its results, Mr. Beit will give a permanent endowment which will annually yield the sum named. The conditions attached to his offer are: (1) that the Professor of Colonial History be resident and that accommodation be provided at the University for the lectures; (2) that the professor deliver annually a public lecture on the history of British dominions over the sea; (3) that the history of British dominions over the sea be included as a separate and alternative special subject in the examination papers of the Modern History School; and (4) that it shall include the following subjects:—(*a*) the history of imperial policy towards British possessions; (*b*) the detailed history of the separate self-governing colonies, including the American colonies before the Declaration of Independence; (*c*) the detailed history of all other British possessions, past and present, exclusive of India and its dependencies.

* * * *

The omission of Indian History from Mr. Beit's scheme is presumably due to the fact that the University already maintains a reader in Indian History, and that it was thought undesirable to trench upon the ground already assigned to another University teacher. But it is to be hoped that at some future time the University teaching in Indian History may be brought more definitely within the scope of the plan for which Mr. Beit has liberally provided the means. In historical education, as in fiscal controversy, the signal importance of India as an integral part of the British Empire needs to be steadily kept in view.

* * * *

A School Inspector at Hong-kong once asked a Chinese boy in an elementary school in the colony to what great power Hong-kong belonged? The boy replied, to Russia. Such a state of ignorance is, of course, entirely exceptional, but, nevertheless, there is no doubt that much might be done by educational means to give to the school children of each colony, better knowledge than they at present possess of the United Kingdom and of those parts of the empire which are distant from their own homes. Similarly, it is expedient to give to the school children of the United Kingdom a more vivid and practical idea of life in those parts of the British dominions which lie beyond the seas. Much has already been attempted in this direction. But the difficulty is largely one of expense. The teaching should be given through the eye as well as through the ear. But the provision of lantern slides of first-rate excellence, and chosen with a definite educational aim, is a costly undertaking. All, who have themselves attempted to make visual instruction a part of their school teaching, know how difficult it is to get exactly the kind of slides one wants if one simply relies on a tradesman's list. Those, too, who have travelled in the United States and have seen the remarkable work of visual instruction, which has its headquarters at the Natural History Museum in New York, realise how much can be gained by having lantern slides of the highest possible excellence. The Colonial Office have just announced a new educational scheme which, if it succeeds, may lead in time to a very considerable extension of facilities for visual instruction on life in different parts of the empire. Acting under the authority of the Secretary of State for the Colonies, a small committee drew up a syllabus of seven lectures on the United Kingdom, each to be illustrated by some forty lantern slides. The syllabus was primarily designed for use in the eastern colonies, and was, therefore, so planned that the hearers of the lectures might be brought as it were on a journey from their own homes to the United Kingdom and there shown the most characteristic sides of British life. In order to carry out this idea, the lectures were arranged in the following order :—

1. The journey from the East to London.
2. London, the Imperial City.
3. Scenery of the United Kingdom.
4. Historic centres and their influence on national life.
5. Country-life and the smaller towns.
6. Great towns, the industries, and commerce.
7. Defences of the Empire.

When completed, the syllabus was sent out to the governors of Ceylon, the Straits Settlements and Hong-kong, and each colony was asked, and consented, to give a grant of £300 to cover the cost of the scheme. The Secretary of State for the Colonies then asked Mr. H. Y. Mackinder, Director of the London School of Economics and Political Science, to undertake the preparation of the lectures. Mr. Mackinder accepted the invitation, and the lectures are now being delivered, in the first instance, at the Stockwell Training College for elementary school teachers. They are being reported *verbatim* and will afterwards be put into print. After correction and, any necessary re-arrangement by the lecturer, they will become, together with any special slides designed for the purpose, the property of the three colonies concerned, but will be available for sale to other colonial governments, The eastern colonies will also supply material for similar lectures to be delivered in the Schools of the United Kingdom and elsewhere. The lectures are intended for the higher classes in elementary schools. With modifications, they will also be available for adult audiences. Each lecture is designed to supply material for several hours' subsequent lessons in school. The lectures are not intended simply to be repeated word for word in a single hour. The object of the lectures is to give to school children, through their eyes as well as through their ears, a true and simple impression of what the United Kingdom and its people are like, to explain to children living in the Tropics what the seasons mean in Great Britain, and so forth. When translated into the vernacular languages, the lectures will be available for use by native teachers who are not acquainted with English.

MICHAEL E. SADDLER.

November 23rd, 1904.

THE BOMBAY CURRICULUM IN HISTORY AND ECONOMICS.

I.

THE writer of this article came out from England to fill temporarily the chair of History and Political Economy at Elphinstone College, prepared, from a slight study of the Bombay University Calendar and from conversation with former Bombay students, for much that might be distasteful and depressing in his work. But, truly, the half was not told.

The study of history may be undertaken in many different ways, but it can hardly be held that "each and every one of these is right." Among other aims, a University may seek to insure its graduates possessing that general knowledge of their country's past that every educated man is expected to show; or it may endeavour to impart a specialised training, which it is good, though not essential, for intelligent students to undergo. There is a utility in the broad study of lengthy periods where the whole is thrown into reasonable perspective, the insignificant being duly subordinated, the irrelevant ignored. There is a utility in the detailed study of a few months or years of an important epoch, the student becoming gradually familiarised with the previously alien surroundings of another age or of other lands; and if the study is carried on by means of first-hand and conflicting authorities, he may acquire some acquaintance with the difficulties of historical research and some slight power in the direction of historical criticism.

But there is a method of historical study (if the expression can be applied without incongruity) which is almost irredeemably bad. It is the barren and unprofitable pursuit of a knowledge more detailed than the educated man requires, unaccompanied by any close investigation into a single period or by a study of the difficulties of historical composition and research,—a method that can only be described as a compromise, in which the evils of two different systems are most unhappily combined without the advantages attendant on either.

The University of Bombay demands of all its B. A. candidates a knowledge of the "Constitutional and Political History" of England from 1660 to 1832, and recommends (without definitely prescribing) Bright's History of England, Vols. II and III. A very cursory inspection of the papers that have been set in past years shows, however, that examiners understand that the subject is *not* "Constitutional and Political History," but *is* "Bright's History of England." "Political History" is admittedly a vague term; but by what manner of definition can it be made to include such a study as would justify the thrice repeated demand of examiners in recent years for a summary of the military events in the war of 1775-1782? or their request for a *detailed account* of the siege and capture of Quebec? or questions asking for descriptions of the rise of Methodism in England, and the character and work of the principal leaders in the movement; of the English conquest of Canada; of the rebellion of the young Pretender; of the battle of Waterloo? Such a method of questioning ties the lecturer down to Bright, and Bright alone. What is to be said in favour of a study of complicated campaigns requiring a memorized summary of facts and dates which few brains can permanently retain, and covering a period so extensive that no student, in the time likely to be at his disposal, can hope to acquire any insight into the difficulties and problems of warfare under either ancient or modern conditions?

It is to be noted, moreover, that the period prescribed stops short at 1832—a curious provision in the curriculum of students who, if interested in England at all, would surely desire a knowledge of contemporary rather than of past conditions and events.

Furthermore—and here the writer would like to interject that his personal bias in his own studies lies in the direction of Constitutional and Political History—the course that would be of most value to Indian students is surely the study of the economic and social history of the English people rather than the history of the constitution and of parliament. Antiquated military history, except perhaps when taken in realistic detail, is for the average man an obviously futile pursuit.

II.

Turning to the work set for special students of history, we find that the University of Bombay has come near to achieving the unique. The subject set is not the History of the Romans under the Empire, with some text-book particularly recommended: the subject set is—*Merivale.* The discovery suggests a further investigation in the calendar to see in what manner the University requirements have been interpreted by the examiners. The investigator looks for questions in criticism—questions dealing with the historical method, the many historical blunders, the literary style of this long-winded composer of pompous platitudes. But no; Merivale's narrative is treated as infallible.

A satisfactory explanation of the retention during many years, without variation, of this peculiar choice of an extremely dull period (and duller author) it is not easy to find. Possibly, the period has been retained as a suitable appendage to the other group subject, Jurisprudence and Roman Law; but even so it is hard to see why Mommsen's *Provinces* and Bury's *Student's Empire* could not have been recommended or permitted.

Personally the writer of this would like to see studied in connection with Jurisprudence, rather than this uninteresting period, some other *quasi*-historical subject such as Elementary Political Science or Elementary International Law. But that, perhaps, is too large a suggestion to be propounded here.

III.

"I wish I had been fortunate enough to begin the study of Economics at Cambridge. But unluckily I had to take up the subject in Bombay, and have had some difficulty in unlearning since what I learned there. I hope you will do your best, when you are at Elphinstone College, to get a modern book substituted for Fawcett."

The words are a quotation (as close as the writer's memory permits) from a conversation held not many months ago at Cambridge. They were uttered by a distinguished scholar who has graduated with high honours in both the Universities.

It is a heavy indictment, but after a half-year's work spent in attempting to adapt himself to local requirements, the writer has come to understand and to endorse it.

Certainly it is difficult to find a text-book of Economics that can be called elementary, and which is not, at the same time, objectionable. But the charge against Fawcett is not that the book is elementary; it is that many of the ideas it conveys require to be "unlearned" if the student is to proceed to more serious study elsewhere. All the fruitful ideas of modern economics—those that cluster round such phrases as "elasticity of supply and demand", "marginal utility", "marginal increments", "*quasi*-rents", "supply and demand curves", "monopoly revenue points" —the modern ideas of continuity and gradation of action, of balanced forces, of mutually controlled social influences—are wanting in Fawcett. Nor can it be urged that there is no time for more advanced (or rather less antiquated) study. Political Economy is read for two years before the B.A. candidate sits for his examination. Moreover, part of the time that is nominally given to Economics has to be devoted to the study of the subject-matter of an historical document—Adam Smith's *Wealth of Nations*, Books IV, V and VI.

The greatest of living economists, lecturing to the most advanced class of economic students at the University of Cambridge, said, some years ago, at the close of a lengthy discourse on various economic treatises, after recommending more books than the hardest reader in the class could hope to master in a year, "for historical reading, you might perhaps take a book of Mill -- say the fourth—and perhaps a book of Adam Smith — preferably the fifth—but no member of this class can have time, no member of this class *ought* to have time, to read more at this stage." The words are quoted from memory, but the writer guarantees their substantial accuracy. The italics in the last sentence, as well as its shape, are not his own; they are Professor Marshall's. And Professor Marshall (it should be noted), so far from being an indiscriminate contemner of earlier economists, has been assailed by others for his patient attempts to reconcile the theories of to-day with the dogmas of the past, when insisting on the essential continuity of economic doctrine.

The Wealth of Nations is not merely an interesting but a highly educational document. If any such special study were to be set, no better choice could have been made. But Cambridge students, taking one of the severest and most extensive courses in economics ever yet planned, have no time, and "*ought* to have no time", to read more than one book of Adam Smith. Our Bombay students are compelled to master with considerable exactitude the substance—alas, it is only the substance, served up second-hand—of three books of this great but antiquated treatise.

There was, however, until the appearance of a locally compiled summary and analysis of the specified portion of the book, nothing seriously objectionable in the attempt to bring our students into contact with an eighteenth century masterpiece, even at the expense of their knowledge of economics. But how many students now are enthusiastic enough (or foolish enough) to open the *Wealth of Nations*, when they have at hand, in a condensed, compact form, all that they are ever likely to require in order to secure the requisite third of the total marks? Practically this short summary, for a student who is blessed with a first-class memory, and who asks only to be allowed to scrape a bare pass in Political Economy, obviates even the need of looking inside Fawcett!

The publication of such a summary is, of course, from the educationist's point of view, exceedingly difficult to justify. No one but a student of economic antiquities desires a second-hand knowledge of the contents of the *Wealth of Nations*. The purpose of the University has been undoubtedly frustrated by the publication of this clever handbook; and it is to be hoped that in this particular, if in no other, the University will make a speedy change in its programme.

The time of our students is limited, but it need not therefore be wasted; and if it is not easy to find many books to substitute for Fawcett without exacting more brain effort than Fawcett demands, still it should be borne in mind that the teaching of better books need not necessarily, for other purposes, be afterwards "unlearned". If even Marshall's smaller book seems too difficult, the University authorities are still able to choose from President Hadley's admirable *Economics*; Prof. Flux's condensed and ably designed though clumsily written *Economic Principles*; the first volume, recently translated, of Dr. Pierson's fine treatise; or even (to descend from works of the first order of merit) Professor Nicholson's small volume. *

IV.

From the B.A. examination let us turn to the M.A. course. The M.A. curriculum in Economics has been recently shortened down to four books. The selection presents two most remarkable features—one, the appalling omission of Professor Marshall's works; the other, the inclusion of Dr. Ingram's *History of Political Economy*. The former admits no comment. But what fantastic notion of educational method must it be that calls for a scrappy knowledge of the opinions of authors whom students will never find time to read (indeed, how many professors in India have looked inside the pages of one in every score of the authors mentioned by Dr. Ingram?)—a knowledge which can only be acquired by the most relentless process of "cram," and which is about as barren and valueless as any knowledge could well be?

V.

But it is necessary to bring this brief indictment to a close.

Into such a curriculum as this, with his lecturing programme "cabin'd, cribbed, confined," by the rigorous requirements of difficult examinations laid down on the narrowest lines, the Bombay "Professor" of History and Economics (the title smacks somewhat of comic opera) must, making whatever compromise he prefers with his educational conscience, fit in his work as best he can. He may not wander beyond the range of set books, or he is wasting his students' time—and those students, he must remember, are preparing to face a most exacting examination. All he can do is, by undertaking for them the task of analysing and summarising, to relieve them of that portion of their work, which, almost more than any other, the wise teacher would wish to see attempted by the undergraduates themselves, if they are to profit at all by their treadmill round of stale and depressing reading. By so doing he reduces their History to a wearisome grind of sheer memory work, which, if not soul-destroying, is at least wasteful and futile, and calculated to produce a lasting distaste for a noble group of honourable studies.

The Professor of History under these conditions is an expensive superfluity, and the fact that his term's work is exhaustingly severe is no justification for the waste of public funds involved in his retention.

LEONARD ALSTON.

MILL AS AN EDUCATOR.

(*Continued from page 209.*)

MILL'S ACCOUNT OF THE REALIST THEORY.

FROM Mill's summary of the arguments in favour of a real outward world the student will scarcely be able to form a correct idea of their scientific value, and the interpreter will require much time to place the reasoning of the realist philosophers in the proper light. The consideration that without definite qualities and powers of real objects our sensitive knowledge would be only a chaos, and that laws determining the harmonious connection of sensations presuppose objective laws regulating the internal constitution of real things, is dismissed by Mill with the brief remark: "It was soon, however, acknowledged by all who reflected on the subject that the existence of matter cannot be proved by extrinsic evidence." Now, in the first place, whether this argument of the realists is to be called a demonstrative proof or a reflective assurance, need be no matter of dispute. The real point is the necessity of giving an intelligible explanation of the uniformity and well-ordered diversity of our sensations. Besides, there are even at the present day many metaphysicians, also such as have reflected on the subject, who are of opinion that from our sensitive representations, even if the co-operation and interpretation of the mind is admitted, we can gain a sure pathway to reality. That our sensations do not depend on our free will or on thought is evident. Whenever we turn to the west of Bombay Island we see before us the heaving sea, and when looking to the east we perceive the mountain range lining the coast. The association of ideas does not explain the first formation of our perceptions, nor why on our first visit to a place we receive the same impressions as the old residents. Finally, let us suppose one thousand persons of the most various experience witnessing on one day a naval manœuvre and on the following day the parade of an army. Their descriptions of the impressions received on each day are substantially the same, and the feelings experienced on the second day differ altogether from those of the previous day. How, then, can this perfect agreement of so many persons be explained, if there are neither men-of-war nor troops going through the various movements and evolutions? No theory of Psychological Association will render it probable that an individual could experience such a well-connected series of almost innumerable sensations, or that a whole crowd of spectators could make the same statements regarding the number, the armour and the size of the ships, or the various kinds of troops and the regularity and variety of their movements, if there were no outward bodies with qualities and activities regulated by certain laws and determining the connection of our sensations. Whatever the extent may be to which the nature of our experience is determined by subjective dispositions, the influence of external objects cannot be excluded.

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* The writer of this article would favour a combination of half a dozen such works, the individual professor being allowed to select for his own class whichever he should find best adapted to his own method of teaching, and the examinees being guaranteed a wide choice of questions. Among other advantages, this would tend to defeat that method of preparing for examinations by memorising lecture-notes and analyses of text-books which Indian students (it is so often stated) love to follow.

The arguments of the realist metaphysicians often take a more indirect form by shewing that the consistent denial of external powers and things leads to philosophic nihilism. If mental activities are the ultimate realities, there remains only one science—psychology. The sciences that study the forces by which real bodies affect one another, are reduced to a collection of unintelligible absurdities. What may be the meaning of geology, if really there are no rocks formed under the influence of the gigantic powers of nature? Why describe the formation of coal if there are no forests, no layers of ground, no deoxidizing process, and no tangible result? If idealism is true, then physiological psychology, which tries to ascertain the relations between certain mental acts and corresponding processes in our nerves, is no more than a dream, and the theory of evolution is but a huge imagination. Finally, if the human organisms around me are only modifications of my own mind, I have no reason to believe that I was ever in communication with the minds of my friends or teachers. Only from certain changes in organic bodies do I get the assurance that these bodies are animated by minds, and that my own mind is brought into contact with them. Take away material bodies and their influence on my organs, and I am reduced to absolute solipsism.

That Mill thought himself justified in his account of realism to pass over in silence all these reflexions of its defenders, cannot but cause surprise. His reference to the argument from intuition is scarcely more satisfactory. It is left to the interpreter to explain to the students the theory of immediate or presentative knowledge of matter, which maintains that in our sensations of sight and touch the mind directly apprehends extension; and as extension cannot be an attribute of the simple act by which, as thinking subjects, we are conscious of ourselves, we are directly confronted with some "otherness," at least in the sense of extra-mental. As the limits of my space do not allow a discussion of this theory, I refer the reader to the Psychology of Father Maher, a modern representative of the immediate knowledge of matter (p. 106, ff. 495).

RELATIVITY OF HUMAN KNOWLEDGE.

More than once, it has been noticed, Mill attempts to settle an important question by an appeal to authority. The great problem of the object and extent of human knowledge is again introduced by the remark that the view which the writer is going to propose is supported by the general consent of metaphysicians. And the section concludes: "All whom at present it is necessary to take into consideration," admit, "that of the outward world we know and can know absolutely nothing except the sensations we receive from it." This authoritative statement and the further assertion that this doctrine is an obvious truth, is just of such a nature as to suppress all discussion and to calm all doubts in the confiding student. But a glance at the foot-note tells him that the question is rather hotly discussed, and that dissentients have manifested themselves in considerably greater number than Mill expected when writing the text. We have, therefore, again a striking discrepancy between text and notes, and are certainly entitled to the question why the former was not changed when the facts expressed in the latter came to the writer's knowledge.

Mill's argument is rather of a negative character: "There is not the slightest reason for believing that what we call the sensible qualities of the object are a type of anything inherent in itself or bear any affinity to its own nature. A cause does not as such resemble its effects. . . . . Or, on what principle are we authorised to deduce from the effects anything concerning the cause, except that it is a cause adequate to produce those effects?" To point out the fallacies underlying the argumentation by which Mill claims to have established this root-principle of modern agnosticism, is no difficult task. In the first place, the author seems to assume that those who maintain the validity of the inference from the effect to the nature of the cause are leaning exclusively on the relation of resemblance, and that they are contending for the existence of this relation in all cases. He, therefore, believes to have scored an easy victory over his opponents by showing that in certain instances, such as the sensation of cold caused by the east wind, resemblance between cause and effect cannot be maintained. Both assumptions, however, are without foundation. The contention that resemblance in the strict sense of the term obtains, wherever there is dependence of an effect on its cause, has never been put forth. But, on the other hand, Mill goes decidedly too far in denying all resemblance between effect and cause. The impress of a human foot on soft ground, the communication of mechanical motion by one body to another, and the fire lit by a burning match are instances of effects resembling their causes at least in some respects. As to the second assumption, it is evident that resemblance is not the only relation on which an inference from the effect to the nature of the cause might be based. There is also the relation of proportion which offers such a passage, and it might almost seem as if our author had been vaguely conscious of his unduly limiting the extent of our inferential knowledge and had intended to correct it by allowing the inference that a cause must be "adequate to produce those effects." Now, adequateness to produce a particular effect means something definite; it connotes or includes definite powers and qualities of the cause, and as these are either identical with the nature of the cause or else take rise in it and are entirely determined by it, the relation of proportion constitutes a principle authorising at least some conclusions from the effect to the nature of the cause. That Mill's admission of the principle—that the cause must be adequate to produce the effect—is immediately followed by the assertion that obviously we can know absolutely nothing of the outward world except the sensations we receive from it, appears to us an almost unpardonable slip. If he consistently adheres to the necessity of proportion, he must allow that from the nature of the effect we can conclude to the nature of the cause; if he abandons the principle he has proclaimed, he cannot even infer that we receive our sensations from an outward world or that external objects co-operate in their production.

(*To be concluded.*)

EDUCATION IN THE TRANSVAAL AND ORANGE RIVER COLONY.*

THE history of education in South Africa at the first thought may seem to be of little interest to the general public in India and of no special value even to those who are peculiarly concerned with the education of Indians. But the educationalist can afford to neglect nothing which bears upon the progress of knowledge in any country, and no member of the British Empire can fail to be interested in the history of any portion of it. The stability of that Empire depends entirely on the value of the education which the children and future generations in the mother country and its colonies receive. Education is not only the source of the prosperity of each individual colony, but also a valuable means of implanting and fostering a sense of the unity and greatness of the British Empire. No one, of course, would be so foolish as to demand a uniform system of education throughout the Empire, or think that the methods of the mother country or of a particular colony are applicable to the whole Empire. But, granting the desirability of maintaining the existence of the Empire, it is obvious that there should be some principles common to the educational systems of all its members, and that all those systems should have in view the promotion of the general interests of the whole Empire as well as the prosperity of the particular communities. The writer of this report on South African Education seems to have a strong sense of the importance of considering education from an Imperial point of view, and for this reason only his account should be of interest to Indian readers. There are other reasons too. The South African War was so critical a period in the history of Great Britain that anything which throws light upon the condition of the Transvaal and the Orange River Colony during the War will be of interest to Englishmen and Indians. The task of reorganisation, which has succeeded the war, is one of immense difficulty and of doubtful issue. To establish a proper system of education is certainly the most important part of that task. On that ultimately hangs the fate of British dominion in South Africa, for on education England must depend to heal the rancour of racial and religious enmity and to dissipate the mists of prejudice which have gathered more thickly after the tempest of war.

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* Public Education in the Transvaal and Orange River Colony, November 1900, to February 1904. By E. B. Sargant, Esq., Director of Education.

Mr. Sargant seems to be eminently fitted for the task of organising and controlling the educational machinery which is destined so completely to mould the character of these important additions to the British Empire. "A member of the English Civil Service," he says, "my thoughts had constantly turned to the extraordinary influence which the school systems in the self-governing portions of the British Dominions were destined to play in regard to the unity of our Empire." A visit to Rhodesia in 1897-98 had inspired this thought, and it led him to plan a great work which should form a philosophical account of the state of education in the British Empire and should diagnose all those tendencies in its different parts which made for union and disunion. In order to be free for the travels which this self-imposed task necessitated, he resigned the Civil Service in 1899, and studied in Australia and Canada the systems of education in vogue there. The knowledge thus gained clearly proved most serviceable. In 1900 he laid aside his great plan in order to assist the Government in organising education in the reconquered parts of South Africa.

Before proceeding to Mr. Sargant's account of his work in the new colonies, it is desirable to reproduce from the Appendices of his Report some information as to the state of education in the Transvaal and Orange Free State previous to the War. We are there told that the history of education in the Transvaal dates from 1874, when instruction similar to that fixed by the English Code of that time for elementary schools was supplied by the State. In 1877, the first year of the British occupation, the average number of children in the schools was 306, and the cost to the State as much as £11 8*s*. 9*d*. per head per annum. By 1882 the town-schools numbered nine and the country-schools thirty-four, with an attendance of 872 children. The cost to the State was £2,753. At this time education was purely secular, and Dutch or English was the medium of instruction according as the parents wished. In the next decade, 1882—91, there was considerable progress. The number of children rose to 8,170, and the cost to £43,623. The burghers paid less than half the cost of education. But teaching was bad, the standard of knowledge low, and already the law existed which was destined to hamper progress and create great difficulties and ill-feeling. By an Act of 1882 the teaching of Bible History was prescribed, and, still more important, it was stipulated that instruction should be given through the

Dutch language. This clause was not at first strictly enforced. But in 1892 the discovery of the Witwatersrand Gold Fields brought into the country a great number of Europeans, mostly English-speaking, and about the same time a Hollander was appointed Superintendent of Education, who set himself to reorganise, to suppress the use of English in the schools of the Republic, and to exclude Roman Catholics and Jews from participation in State subsidies. The result of the legislation which this Dr. Mansvelt in 1892 inspired was to prevent English-speaking children from earning a Government grant and to reduce the number of town-schools and of children attending them by forty per cent. The bulk of these children were the English-speaking children of Johannesburg. The matter was aggravated by the continued influx of Uitlanders, till in 1895 some leading Uitlanders of Johannesburg promoted the formation of a Council of Education to provide schools and efficient education for the miners and artisans, and poor schools for those who could not pay fees, irrespective of nationality. The completion of all the schemes of the Council was hindered by the political unrest which followed on Jameson's Raid, but they accomplished good work, and in 1897 had established schools for some 800 pupils. This characteristically energetic action of the Uitlanders alarmed the State educational authorities, who produced a law in 1896 which professed to remedy the Uitlanders' grievances, but simply gave more power to the hostile Superintendent. The history of education in the Transvaal from this time narrates the attempts of the Council to extort more favourable conditions from the State only to be "met with scorn and contumely." Such increase of scholars as was made was due to the large subsidies paid by the State towards the education of children—out of taxes collected largely from Uitlanders—and to the efforts of the voluntary workers. The Council in 1899 were carrying out a great scheme for the erection of schools for the children of Uitlanders when the war broke out.

In the Orange Free State hostility between the Boers and Uitlanders does not seem to have existed to the same extent—the numbers of the latter being probably far fewer. Dutch was the medium of instruction there in all country-schools: in the towns and villages, either Dutch or English was allowed, provided at least half the subjects were taught in the Dutch language, but the Dutch language was on the point of being enforced when the war broke out. In 1898 there were two High Schools with 345 pupils, some of whom were sent to the Cape University. Of Elementary Schools there were 197, with a maximum attendance of 7,812. The cost of education to the State was £54,530, or £6 11*s.* 5*d.* per annum per pupil.

Such briefly was the condition of affairs when the war broke out, and all educational machinery was brought to a standstill. In the Orange Free State a fairly efficient organisation existed, but one calculated to maintain the predominance of the Dutch. In the Transvaal there was a bitter struggle between the Dutch and Uitlanders, not merely on the question whether education should be on Dutch or English lines, but whether the English-speaking children should obtain any facilities for education at all. When Mr. Sargant arrived in Africa in November 1900, he had first of all to arrange such a temporary system of education as was possible while war was still being carried on, and secondly to lay the foundations of a system which, while it satisfied the Boers, would develop all the potentialities of the country and its inhabitants and permanently weld the new colonies into the mass of the British Empire. The first task was one of great difficulty, but the second was one of not local but imperial importance. In it he was from the beginning guided, he tells us, by principles formulated by the authorities in England.

(*To be continued.*)

PUBLIC INSTRUCTION.

I.—IN TRAVANCORE, 1902-03.*

Schools and Scholars.

Male scholars, 150,556 or 39·9 per cent. of males of school-going age; female, 46,037 or 12·7 per cent. Total number of scholars, 196,593 or 6·6 per cent. of the total population, showing an increase of 6,750 scholars. Schools, 3,821 an increase of 11. Private aided schools show an increase of 46, private unaided a decrease of 36 schools, and an increase of 928 scholars.

"In almost every village of Travancore the old *Asans* (indigenous schoolmasters) still hold their sway and decry the modern system of education among the ignorant folk, who have still unbounded faith in the wisdom of their ancient *Gurus*. Some of these ancient *Asans* hold their position by virtue of heredity—their ancestors having followed the profession for generations. In some cases the parents of the school-going population in rural parts are the pupils of the present *Asan*, or one of his ancestors. Hence they hold him in great reverence and consider his teaching the best they can secure for their children. In other cases a half-starved *Asan* waits on the influential man of the village, under whose patronage he starts a school which is largely attended by the children of that village. The people generally resent any insistence on regular attendance and strict discipline, and the masters are reluctant to submit to the control and supervision of the Educational authorities, without which no aid from state funds could be given. These circumstances account greatly for the existence of a very large number of unaided private schools."

Total expenditure, Rs.5,52,283. The income in fees has decreased owing to a reduction of fees in Primary and Vernacular schools.

College Education.

Colleges, 6; cost to the State, Rs.51,844. In the F. A. Examination, 65 appeared and 27 passed; of these 28 came from the Government College of whom 15 passed. From the latter College, 34 appeared at the B. A. Examination (English Language Branch) and 30 passed. From the Government Law College, 47 appeared at the B. L. Examination and 18 passed.

English Schools.

Schools, 79 (an increase of two) scholars 13,754 (increase of 1,043). Twenty-two High Schools sent up 385 scholars for the Matriculation Examination of whom 154 passed.

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* **Report on Public Instruction in Travancore, 1902-1903.**

Vernacular Schools.

Schools, 3,718 (increase of seven) scholars, 1,81,516 (increase of 5,389).

Training Schools.

Two Government schools for male and female teachers with 60 and 13 students, respectively. In the Final Examination, 29 males and 9 females passed. The course of training for male teachers was extended from one to two years. To improve teachers in schools for backward classes, a Primary Certificate in Vernacular was instituted for their benefit. Three aided training schools (two for girls) had a strength of 56. Rules were passed providing aid to special schools for training teachers belonging to the backward classes.

Technical Schools.

Five schools (four aided). At Delhi, Travancore ivory won a gold medal and a balcony and carved wooden showcase was much admired. At Ahmedabad, cloth woven from plantain fibre won a special prize. The plantain fibre industry makes steady and perceptible progress. In the aided Schools, Lace-making, Commercial Engineering, and Weaving Classes have been added. A Hindu student who took a first class in the B. A. Chemistry Examination was sent by Government to Europe to study Advanced Chemistry and for the B.Sc. in Agriculture.

II.—IN BURMA, 1902-03.[*]

Rangoon College and Collegiate School.

In May 1902, orders for the transfer of both institutions to Government were received, and the school was made over in July. The College was not transferred pending a reference to the Secretary of State as to the terms to be offered to the Principal and Lecturers under contract with the Syndicate. The College still remains under the Syndicate.[†] In the absence of the Principal, Mr. H. H. Rose, on leave, Mr. E. D. Marshall performed the duties of Principal. Quarters for the College-Sergeant were constructed. Mansfield gas apparatus and fittings for the laboratories of the Colleges and Chemical Examiner were installed. Rules for the Law Classes were framed. An attempt was made to obtain the recognition of Rangoon as a centre for the Honours Examination in Practical Chemistry at the Calcutta University B. A. Examination, so as to save Rangoon College students the trouble and expense of going to Calcutta. The Calcutta University refused the concession and the Executive Committee of the Burma Syndicate regard the refusal as a distinct discouragement to the progress of higher education in Burma.

Examination results:—

			Appeared.	Passed.
B. A.	...	...	17	11
F. A.	...	...	57	16

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[*] Report of the Educational Syndicate, Burma. By H. Cowling, Esq., Registrar.

[†] At the quarterly meeting of the Syndicate in September 1904, it was stated that the transfer of the College to Government had not yet been effected, and that the cause of the delay was not known.—*Editor.*

The conduct of students in the College hostel was generally good, though one student was expelled.

At the examinations, two candidates for having 'notes' in their possession, were expelled and rusticated for two years; one for having employed a substitute, was debarred for life from Government, Municipal or any Local authority's service.

In the examination for Teacher's Certificates, out of 703 male and 120 female candidates, 271 and 64, respectively, passed: 117 out of 179 candidates from Normal schools passed.

The Registrar's pay has been raised to Rs.450, rising to Rs.500.

The total receipts of the Syndicate were Rs.31,734, and the expenditure, Rs.30,011. The Rangoon College receipts in fees, etc., were Rs.87,903, and its expenditure, Rs. 73,496.

NOTABLE HOUSES IN INDIA.

(BENGAL—*continued.*)

Name of Building.	Place.	Reasons for Commemoration.
Wilson's House ...	Serampore ...	This was the residence of the Right Reverend Daniel Wilson, Bishop of Calcutta, 1832—58.
Carey's House ...	Do. ...	This was the residence of William Carey, Orientalist and Missionary, from 1800 to 1834.
Martin's Pagoda ...	Do. ...	This building was occupied by the missionary Henry Martin for public meetings and for private prayer and meditation in 1806. Martin died, in Armenia in 1812, aged 32.
Cheap's House ...	Surul, Birbhum ...	Residence of Mr. Cheap, the first Commercial Resident at Surul at the end of the 18th century.
House at Saidabad ...	Saidabad, Murshidabad.	Residence of Maharajah Nandakumar, who was executed for forgery on August 5, 1757.

Name of Building.	Place.	Reasons for Commemoration.
Diwan Khana Bara Mahal.	Lalbagh, Murshidabad.	Residence of Mir Jafar, Nawab of Bengal, 1757—65.
Magistrate's Court ...	Malda	The old East India Company's factory. Erected in 1771.
Government Offices...	Chinsura	The old Dutch barracks.
Do. ..	Berhampore ...	Do.
Chajju Bagh	Bankipur	This house was formerly occupied by Mr. W. Tayler, Commissioner of Patna. Here the European residents took refuge for some weeks during the Mutiny in 1857.
The Little House ...	Arrah, Shahabad ...	This building was the scene of the memorable defence of Arrah by a part consisting of nine Europeans, six Eurasians, three Indians, and fifty Sikh Police, from July 27 to August 3, 1857, against three regiments of the native army who had mutinied at Dinapore.

THE UNITED PROVINCES OF AGRA AND OUDH.

Name of Building.	Place.	Reasons for Commemoration.
Old Fort	Chunar	This house was occupied by Warren Hastings, first Governor-General of Fort William in Bengal, in the summer of 1781.
Madho Das' Garden...	Benares	Here Warren Hastings stayed in Benares, in 1781.
Nandsar House ...	Do.	This house was defended by Mr. Davis against Vizier Ali, January 14, 1799.

Name of Building.	Place.	Reasons for Commemoration.
The Mint House ...	Benares	This house was built as a mint in 1820-21 from the designs of James Prinsep, who lived here till 1830. It was used as a place of refuge by the Europeans in June and July, 1857.
The Shivaka House.	Do.	Residence of Raja Chait Sing, where, on August 16, 1781, he was arrested by the orders of Warren Hastings, but was rescued by his adherents, who massacred two companies of native troops with their British officers.
Man Mandir	Do.	Erected by Raja Man Singh, *circa* 1600 A.D., and used as an observatory in the time of his descendant Sawai Jaya Singh, the founder of Jaipur.
Baithak of Tulsi Das.	Do.	In this room the poet and religious reformer Tulsi Das is said to have composed his Vinaya Patrika, a book of 279 hymns and prayers to Rama.
House at Azamgarh...	Azamgarh... ..	Residence of Mr. Thomason, when Collector of Azamgarh, 1832—57.
Khankah	Jaunpur	This building was the dower house of the Sharki kings of Jaunpur and contains among others the tomb of Husain Shah ibn Mahmud, the sixth of the dynasty, who reigned A.D. 1458—76.
Dilkusha	Fyzabad	Residence of Shuja-ud-daula, Nawab of Oudh, 1756—75.
Moti Mahal	Do.	Residence of Her Highness Ammat-uz-zuhura, the "Bahu Begum," wife of Shuja-ud-daula. Married 1743, died 1815.

Name of Building.	Place.	Reasons for Commemoration.
Fort Calcutta ...	Fyzabad	This fort was built by Nawab Shuja-ud-daula after his defeat at Buxar in 1764.
Moti Bagh	Do.	Residence of Nawab Aliya Sadar-un-nissa Begum, the "Nawab Begum," mother of Shuja-ud-daula.
House of Tulsi Das...	Rajapur, Banda ..	Site of the house of Tulsi Das, a Hindi poet and religious reformer, author of the Hindi *Ramayana*, who flourished at the end of Akbar's reign and died A.D. 1624.
Bagh Badshahi ...	Khajuha, Fatehpur	This garden was made by the Emperor Aurangzeb to commemorate his victory over Sultan Shuja at Khajuha, January 5, 1659.
Mubarak Manzil ...	Agra	This house was built by Aurangzeb to mark his first dwelling place in Agra after the defeat of Dara Shikoh in June 1658.

THE NEWS OF THE MONTH.

BENGAL.

THE Chancellor of the Calcutta University has nominated sixty-four Ordinary Fellows of the Senate, it being in his power to nominate eighty. Of these sixty-four only twenty-five, or rather more than a third, are natives of India. The usual complaints are being made, that the list of nominees is not representative and that men of long-standing claims and others whose position and work give them a right to be considered have been omitted.

The Secretary to the Lieutenant-Governor has addressed a long letter to the Executive Committee of the Ranchi College scheme, saying that it was never Sir Andrew Fraser's intention that the Ranchi College should involve, either now or in the future, the abolition of the Presidency College, and that it never could do so "if there is any truth in the view, which his Honour shares with most of the intelligent friends of education in the province, that there is not too much of higher education of a sound character in Bengal." The letter also discourages the appointment of Commissioners and other officials as chairmen of the Committees to be formed for the purpose of collecting money for the scheme. "Sir Andrew," the letter says, "desires that the support which he hopes to receive from the public in regard to the scheme may be manifestly of an entirely voluntary character." It appears that the proposal that the public officials should act in this way emanated in an informal meeting and was accepted by the Executive Committee without discussion.

The Bengal Chamber of Commerce, in a reply to the Bengal Government regarding commercial education generally, and the improvement of the commercial classes at the Presidency College, say the question was considered by a special Sub-Committee in consultation with Mr. Prothero, Principal of the Presidency College. The Sub-Committee unanimously agreed that a scheme of commercial education on the right lines would be productive of considerable benefit, but were not in favour of classes being held with the object of candidates obtaining the London Chamber of Commerce certificates, as they considered the needs of native clerks in this matter in Calcutta offices were quite different from the requirements of those in London offices. The Sub-Committee expressed preference for a scheme under which boys at the colleges and clerks in offices (the latter by means of evening or continuation classes) could be trained in useful, but not highly elaborate, commercial subjects, to whom certificates of merit should be issued by the educational authorities here, as is done in Madras. The mercantile community would place as much, if not more, value on such certificates as they would on those of the London Chamber, provided the students had been through some really practical commercial course of instruction which made them distinctly more useful for office work. With regard to the subjects to be taught, the Sub-Committee were of opinion that they should in the main be similar to those taken up by the Singapore Chamber of Commerce, or the Madras educational authorities, or perhaps an adaptation of both. They understand the subjects in any case would be the same for day classes at the Presidency College as for evening classes. They suggest the desirability of offering scholarships and inviting the mercantile community to offer prizes through the Chamber to encourage candidates. The Committee are of opinion that when once it was found that such certificates carried some value when employment was available in mercantile offices, candidates would compete for them in their own interests, and need no inducement. In order to bring the Chamber into complete touch with the proposed scheme, the Committee would be prepared to publish, when available, a complete list of the successful candidates for certificates for circulation among members. This would enable holders more readily to obtain employment and also give the certificates a commercial value.

A Committee of College Principals met on December 7th to arrange details for the organisation of messes and hostels for students. The main points so far agreed upon are (1) that each college should have its own mess, strictly limited to its own students; and (2) that the difficulty of meeting the expense of maintaining permanent residential quarters by colleges with variable attendance should be met by asking the Government to take up the necessary-houses, to be let at cost price to the colleges. Each college would then be allowed to secure the accommodation it required, and, in the event of its attendance falling off, Government could allot the vacant quarters elsewhere. The Colleges would thus be relieved of burdensome financial responsibility, yet Government would incur no very heavy liability, since students must pay for their quarters in any case, and the difference would not be great between what they now expend individually for indifferent housing, and what it would cost to provide for them comfortably in permanent hostels. The principal advantage of such an arrangement lies in the increased supervision it would enable the authorities of each College to exercise over their own students.

Proposals are under the consideration of the Central and Provincial Governments for the production in various art schools in India of cheap illustrated pattern books to record all that is best in each characteristic Indian art industry and to preserve designs.

Mr. Tate, Professor of the Civil Engineering College, Sibpur, has been placed upon special duty for six months of his furlough to study at Leipsic.

It has been decided to have fresh vernacular readers prepared for use in the Primary and Middle schools in Assam, and the Government of India have sanctioned the grant of an honorarium of one thousand rupees each to Mr. Abdul Majid of the Assam Commission and Rai Bahadur Bhupal Chandra Basu, Assistant to the Director of Land Records and Agriculture for this work. The books are to be written, in the first instance, in English, and are to be afterwards translated into Assamese and Bengali.

BOMBAY.

The following is the gist of the Government Resolution on the Director of Public Instruction's Annual Report for the year 1903-04. His Excellency recognises the disastrous effects of plague necessitating the closing of educational institutions which is, "quite apart from any consideration of the sufferings caused by the disease, most prejudicial to the pupils and depressing to those who are responsible for the work of education. His Excellency desires to record his appreciation of the spirit in which all such difficulties were faced by teachers and pupils alike." "The colleges and the University suffered least in this respect, and the report shows cheering indications of resourceful and vigorous life in these institutions." The demand for increased residential accommodation and teaching facilities is being met with as fast as funds permit. The favourable position of the Fergusson College at Poona is recommended as an example to the Guzerat College, Ahmedabad. Regret is expressed that in the case of the latter, as of the High School, Ahmednagar, the policy of the Education Commission of 1882 of trust in private effort is not yet productive of good results. The experiment at Karwar of a hostel for students privately managed by the Headmaster is commended, and the absolute necessity of secondary schools improving the quality of their staff through the Secondary Teachers' Examination is emphasised. Attention is called to the variety of ways in which the increase of Government grants to Primary schools is being utilised, to the revision of departmental text-books, the development of the indigenous Mulla School in Sind, the growth of female education and the recognition by Boards of their responsibility in this respect. Approval is expressed of the attempts to extend education to the aboriginal and depressed classes. The "tendency to substitute a somewhat superficial education in English for a study of the higher vernacular standards" is noted as less satisfactory. Government emphasises the importance of developing normal schools and promises to consider favourably all proposals for their improvement. The plan of bringing in masters already working in schools for a course of training in the latest methods of education is highly commended. The educational work done in Native states, specially those of Kathiawar, (the Rajkote male and female training Colleges in particular) Cambay, Rajpipla, Kolhapur and Jamkhandi is noticed with approval.

The proposal of Mr. D. Dharamsey in the Corporation for an enquiry into the working of the Victoria Technical Institute was defeated after a prolonged discussion.

In reply to questions in the Legislative Council by Mr. C. H. Setalwad, Government said

(1) that a Committee is now sitting to consider the needs of the students of the Grant Medical College for a hostel. Action would follow as soon as a satisfactory scheme is sanctioned and funds are available.

(2) that it would consider the desirability of providing instruction in Government Colleges in the vernaculars, which are now optional subjects at the M A. Examination.

At the distribution of prizes by Lady Jenkins at the Girgaum Girls' High School, the report of Miss Edge said that the work of the school had progressed in spite of interruptions through change of teachers. The loyalty and devotion of the staff were highly commended, and the success of a student in winning Lady Lamington's prize for the best essay by any girl pupil of Bombay was noticed. The sending of five teachers from Government schools to Miss Barling for a course of training in kindergarten principles and methods is a proof of the high standard of teaching maintained in this school.

BURMA.

The Resolution on the report on Public Instruction in Burma for the year 1903-04 says that the courses for indigenous schools has been revised on the lines proposed by the Bengal Government with the object of providing instruction of a more practical character and of adapting the curriculum to the needs of agriculturists. As regards the abolition of results-grants, a beginning is being made by introducing in certain special classes of indigenous schools, a system of grants that is not based on the results of examination, but is framed on the lines approved by the Simla Conference. It is proposed to introduce the new system tentatively in selected schools and if, as is hoped, the new rules prove a success, their operation can be extended naturally and without difficulty to the other classes of schools also. Proposals for the improvement of technical and industrial education have also come under discussion during the year, and are receiving careful consideration. Since Mr. Pope's report was written, orders have been passed sanctioning the constitution of Provincial and Subordinate Services. The statistics indicate further progress, and the large increase in the number of pupils undergoing primary education in public instructions is specially satisfactory. It must be admitted that the figures of the results of examination in the more advanced classes are somewhat disappointing, as they do not seem to show that much progress is being made in the advancement of higher education.

The Burma Government are offering encouragement to Burman students to undergo course of training at the Sibpur Engineering College. The number of candidates from Burma who may be admitted at Sibpur annually is at present fixed at half-a-dozen; their selection will be made by the Provincial Government; Burma students will not be eligible to compete for Bengal Government scholarships, and their practical training will be arranged for by the Burma Public Works Department. In order to encourage students from Burma to enter the college, one scholarship will be offered each year, which will be open to candidates of Burmese and Indo-Burmese origin, and to Europeans and Eurasians whose parents are domiciled in Burma. The Assam Government are also offering inducements to students from Assam to proceed to the Sibpur Engineering College.

The large new building of the St. Joseph's Chinese Orphanage was opened on November 14th by the Lieutenant-Governor. Father Lefond gave a brief history of the Orphanage. The Lieutenant-Governor congratulated the managers in their progress and said that they would be wise to develop specially the technical side of the institution. Private schools like this would be preparatory to the higher technical training which Government intended to institute in Burma.

CEYLON.

A Commission has been appointed by H. E. the Governor to report on the question of Elementary Education in Ceylon. The members are the Hon'ble Mr. Wace (Government Agent, Central Province), Mr. E. Turner (Chairman, Planters' Association), Mr. G. Harward (Director of Public Instruction), the Rev. H. Highfield (Principal, Wesley College), and Mr. D. B. Jayatilleke (Principal, Ananda College). It is thought that the Commission will deal chiefly with the problem of providing funds to meet the increasing requirements of the schools, and will scarcely trouble itself with the subjects taught in the schools. The meetings will be held in Kandy.

It will be interesting to note what the increase in expenditure has actually been. The Administration Report states that the total annual expenditure by Government was in 1881, Rs. 4,82,840; in 1891, Rs.5,08,361; in 1901, Rs.9,07,595; and in 1903, Rs.10,38,652. The number of pupils returned for both Government and Grant-in-aid schools was in 1881, 84, 757; in 1891, 116, 601; in 1901, 183, 261; and in 1903, 198, 454.

The work of the Director of Public Instruction is not now so light as it was when the first Director was appointed, and an application was made for an Office Assistant, who would relieve the Director of much of the routine work. The Government have, however, refused to make the appointment, as they do not see the necessity for the additional expenditure.

The results of the English Teachers' Certificate Examination have been published. In the Second Class, one male and one female candidate passed; in the Third Class, only seven males and one female. The obvious inference is that most of the candidates enter for the examination without sufficient preparation.

It is announced that the second examination by the Committee on Oriental Studies will be held on the 24th April, 1905. There will be three centres—Colombo, Kandy, and Galle—instead of one.

Kingswood College, Kandy, had its Distribution of Prizes on the 19th November. The Director of Public Instruction presided, and held out hopes that if a Local Committee would arrange for Drawing Classes to be held in Kandy, the Department would try to provide a qualified teacher. At present Colombo alone possesses all the advantages of a Training College, Science Laboratory, &c.

Mr. C. Arnold, son of the late Sir Edwin Arnold, appeals to friends and admirers in Ceylon of his father, on behalf of the proposed Arnold Memorial in England. If funds permit, he will suggest to the Committee a memorial in Ceylon, in addition to the proposed scholarship at Oxford.

Mrs. M. A. Koelmeyer, a retired Government Schoolmistress, died on the 13th November in her seventy-fourth year. She had served Government for thirty-seven years.

Dr. Castellani has been awarded the prize of £50, presented by Sir John Craggs to the student who made the most valuable contribution to tropical medicine. Dr. Castellani discovered the cause of the sleeping sickness.

Mr. C. P. Dias, Headmaster of Wesley College, celebrated in November the twenty-fifth anniversary of his connection with the College. He received a purse and an address from the teachers and pupils, and the day was observed as a College holiday.

Mr. A. G. Fraser, the newly appointed Principal of Trinity College, Kandy, has arrived and taken up his duties.

A Lecture on English Grammar and Composition was delivered by the Rev. A. H. Smith, of St. Thomas' College, Colombo, under the auspices of the Ceylon Teachers' Union.

Mr. Secretary Lyttelton has promised to bring under the notice of the Governor of Ceylon Mr. Weir's suggestion that the Line Schools on Estates in that Colony should be inspected by the Government. If His Excellency adopts the idea, it will then be seen whether the Line Schools, to which Mr. Burrows in his Report appears to attach so much importance, are of any real value; or if, as is stated by Mr. Sidney Long, of Matale, in the *Ceylon Observer* of September 17th, 1904, such Schools are incapable of any great development. A line school, as Mr. Long points out, is merely a class founded by a "kangani" (or native overseer) for the benefit of his own children, and two or three other boys *of the same caste*; and is incapable of much development. It educates "some favoured children in one set of lines, and perhaps a few outsiders; it might be developed to educate just a few more, and that is all." It is evident, therefore, that the *mere multiplication* of these "line schools" will *not* meet the necessities of the case.

MADRAS.

At a meeting to celebrate the twenty-fifth anniversary of the Eurasian and Anglo-Indian Association of Southern India, Mr. Stone Inspector of European Schools, reviewed the history of European education in Madras for the last quarter of a century, and said that there was a distinct falling off in secondary education due to the defective methods and inefficient and wasteful system of organisation. The number of European students in arts and professional colleges had seriously declined. But while the number of male students had diminished largely the number of females had increased proportionately. He deplored the lack of properly trained teachers, and advocated the introduction of a large number of English-trained teachers in all European schools. The Governor, in reply, said that Government recognised the unsatisfactory state of affairs, but was limited by lack of funds. The introduction of English-trained teachers was a very expensive matter. Meantime, he thought, most progress would be effected by making parents realise more clearly the importance of education to their children. A correspondent in the *Madras Mail* suggests as the reason for the decadence of higher education among the community, the fact that higher literary education does not pay, leading only, after a prolonged and keen competition, to obscure and poorly paid posts in Government Service. On the other hand, lads who leave school at the secondary stage and enter engineering, medical, mechanical, and commercial professions ultimately and also sooner find themselves in a good financial position. The increase in the number of females he explains by the fact that women find a large opening for employment in the teaching and medical professions.

Mr. E. B. Powell, Director of Public Instruction, 1862—75, has died in England.

Mr. E. H. Elliot, Junior Professor of English at the Madras Presidency College having retired, Mr. P. E. Messinier, Acting Inspector of Schools, Western Circle has been appointed to act in his place.

Fifty-one candidates have been rusticated for irregularities at the University Examinations. One, a candidate for the M. A., has been debarred from appearing again. Two B. A. candidates who stated their age fraudulently have been debarred for two years.

The Committee of the National High School, Negapatam, has presented a long and well-reasoned Memorial to the Government of Madras protesting against the action of the Director of Public Instruction in refusing "recognition" and grants-in-aid to the school on the ground that the educational needs of the town are at present fully met by the two existing Mission High Schools. The object of the school is to provide secular and religious instruction for Hindu and Mahomedam students. The school contains 300 students, which the memorialists claim is sufficient proof of the need for its existence. They also say that its financial position is sound.

The recent Government Grant-in-Aid Examination of the Olcott Panchama Free schools having resulted in an averge of 95 per cent. pupils passing, the Superintendent, Mrs. N. A. Courtright, has written an able article in the *Madras Mail* explaining the method of teaching. The majority of pupils, being ultimately employed as servants of Europeans, require a knowledge of English. To supply this the schools, in addition to the work prescribed by the Code, teach English from the Infant Standard upwards, and instead of beginning with the complicated alphabet, employ conversation and the use of blackboard, chalk drill, clay modelling, selected games, and leaf modelling. Mrs. Courtright incidentally condemns severely the training in drawing employed in the Schools of Arts and the use of coloured paper for folding, beads for stringing, and cards for embroidering. She concludes "while we have the opinion of many who are engaged in educational work in India that these are model schools of the first rank, yet when we measure them by what it is possible to attain we are far from satisfied."

PUNJAB.

The Senate of the Punjab University is now complete, and includes 16 Hindus, 14 Mahomedans and Sikhs.

On Thursday the Lieutenant-Governor of the Punjab laid the foundation-stone of the Khalsa College at Amritsar.

Mr. J. C. Godley, Inspector of Schools, has been transferred from Rawalpindi to Lahore. With the sanction of the Secretary of State, Mr. W. T. Wright has been promoted to the Inspectorate in the Punjab Education Department, and Mr. Percy Brown to the same status as the Principals of other Schools of Art in India.

A Normal School for women will be opened at Lahore on the 4th January 1905. The school will be under the control of the Education Department, and will be held, for the present, in the premises of the Victoria Girls' School. The object is to prepare women to work as teachers in Girls' Schools. Inspecting officers of all grades, tahsildars and other officials will be able to give valuable assistance in promoting the success of the institution, and it is expected that the wives and female relatives of male teachers, as well as widows of some education, will in many cases, offer themselves for training. Stipends not exceeding Rs. 8 per mensem will be awarded to selected students, and boarding accommodation will, if required, be provided free of charge. In cases where in order to secure the attendance of any suitable student from an out station an allowance for a guardian or female relative to accompany her is required, endeavours will be made to provide this; such allowance will in no case exceed Rs.5 per mensem.

The Punjab Government have ruled that in all recognised day or boarding schools for Europeans one of the conditions of recognition and of a grant-in-aid will be the adoption of a set of fire rules or precautions against fire. Such rules will be submitted by the Managers of Schools for the formal approval of the Punjab Government through the Inspector of European Schools. When these rules have been approved, it will be the duty of the Inspector of European Schools to satisfy himself that the teachers and the pupils are fully acquainted with the rules, and that copies are hung in prominent places in the school premises. All grants-in-aid from provincial revenues will in future be paid on the condition that school buildings and property are insured against fire, and that security exists for the repayment of all sums paid by Government in the event of the destruction of such property by fire.

The Inspector-General of Education, N.-W. F. Province, is able to report a continuous increase in the number of Primary Schools and in the attendance and in the proportion of Mahomedans and the agricultural classes attending school. He refers in terms of appreciation to the connection maintained with the Punjab Education Department, which, he says, "enabled the educational institutions of the N.-W. F. Province to participate in the benefits of numerous improvements introduced into the system of training teachers, the courses of study. and other matters of instructional organisation by Mr. W. Bell, C. I. E., Director of Public Instruction, Punjab." The Chief Commissioner, in reviewing the report, says that his thanks are due to both Mr. Bell and Dr. Stein for their control of the Department. The progress shown by the schools in the Kurram and Tochi Agencies is considered a gratifying feature of the year's work. It is noted that the municipal expenditure incurred by the Committee on education fell much short of the demandable maximum, and this deficiency was due to the Committee at Peshawar having fallen short by nearly sixty per cent. But it is pointed out in this connection that the educational facilities are, owing mainly to missionary and other private enterprise, at least as great in Peshawar city as in any other town of the Province.

UNITED PROVINCES.

The Senate of the Allahabad University has been brought up to its full strength of seventy-five members by the nomination of additional Fellows by the Chancellor, among others of Professor J. Patterson, Professor P. H. Edwards, the Rev. D. Whitton and Mr. E. C. Cholmondely. There are forty European and thirty-five native gentlemen. The great majority of the Fellows are educationalists, only five of the Europeans being unconnected with education. Law is represented by three High Court Judges, two Small Cause Court Judges and eight barristers. Science is strongly represented. Commerce and native banking have each a Fellow. There are three representatives of the landed interest, and all the chief colleges are well represented. The Central Provinces and Berar have seven Fellows. It is difficult to see how the list could be made more representative.

The Central Standing Committee of the Mahomedan Anglo-Oriental Educational Conference in a formal meeting unanimously approved the selection of Mr. T. Morison, Principal of Aligarh College, as the President of the Mahomedan Educational Conference at Lucknow in the Christmas week.

There being no Schools of Art in the United Provinces, Central Provinces and Assam, the Government of India propose to bring the United Provinces and Central Provinces for the present within the sphere of the Mayo School of Art at Lahore, and Assam within that of the Calcutta School of Art. If this be found practicable, the Superintendents of these institutions would be allowed to travel within areas affiliated in the same manner as in the Provinces to which they belong.

At the inaugural meeting of the newly-formed Muir College Historical Society, Professor Thibaut delivered a lecture on the sources available for the study of early history. The lecture, delivered before a large gathering of students, dealt with the materials available for the study of the four great ancient civilisations. After dealing with Egypt, Assyria and Babylonia and China, Dr. Thibaut pointed out that while there were ample evidences to show the considerable antiquity of their civilisation, the historical sense had at all times been lacking amongst the Hindus. This was to be regretted, and he hoped that the members of the Society would be able to do something to reconstruct the past from the scanty materials which were available. It appeared to be thought by some Indians that European students had a desire to deny the antiquity of the Indian civilisation, and the degree of excellence to whch it had attained. This impression was, he could assure them, entirely erroneous. Nothing would give European students greater pleasure than to receive adequate proof of greater antiquity than appeared justified by the materials now available.

On November 23rd, at Allahabad, Sir James La Touche opened the new buildings of the Training College for Teachers. His Honour was received by the staff in a shamiana and presented with a silver key by the Principal, Mr. J. C. Kempster. Sir James unlocked the door in the theatre, and Mr. Kempster sketched the history of the institution since it commenced in Lucknow eight years ago. He referred to the immense interest of Mr. Lewis, Director of Public Instruction, in the training of teachers. He also thanked Mr. Slater, the Engineer, for the trouble in planning the buildings and Mr. De La Fosse, Assistant Director. He also referred to Mr. Lewis' success in normal schools and training colleges. Sir James LaTouche said he was glad to notice that trained teachers were appreciated, as shown by the demand being greater than the supply. Now the training college had excellent buildings, his Honour hoped the theatre would be used by native gentlemen desirous of seeing modern methods of education.

GENERAL.

Sir Henry Cotton has inaugurated his visit to India to preside at the Indian National Congress by running amuck at the Indian Educational Service. "The professors," he says, "deliver their lectures and discourses on Milton and Mill in the same spirit as a Magistrate dispenses justice in his cutcherry. They do their official duty, but they make no attempt to exert a moral influence over their pupils, to form their sentiments and habits, or to control and guide their passions." The man who penned that sentence is not likely to display the discretion and self-control as President of the National Congress, which a "Magistrate in his cutcherry" has to display. If Sir Henry would attempt to cultivate a little knowledge of the Educational Department he would be more chary of making such foolish generalisations.

GEOGRAPHICAL NOTES.

BY

W. H. ARDEN WOOD, M.A., F.R.G.S.

THE utility of carefully planned and properly conducted school excursions in the teaching of geography is well recognised in several European countries and in the United States of America. For a time such excursions naturally struck outsiders as savouring rather of play than of work, and it is true that they have to be extremely well conducted in order to justify the large demand they make upon school-time. But assuming that they are well-conducted, as they should be if teachers are in earnest and willing to take pains in organising them, they supplement in the most effective way the work of the class-room by putting the pupils in the way of getting first-hand knowledge. Only those who have seen the effect are able to realise the beneficial way in which such first-hand knowledge can put life into the dry bones which are too often all that there is to show as the result of ordinary class-work. In India, schools in the plains might seem to be ill-situated for the purposes of such realistic lessons, and, no doubt, the object-lessons which can be given are illustrated in a less striking way than they may be in regions with more "scenery." But an article in the September number of the American

Journal of Geography shows what can be made of the school excursion even in the almost featureless country around Chicago. "A single trip to the Hawthorne stone-quarry and the Drainage Canal near by brought out many points very strikingly; amongst them the following: rock strata, . . . relation of mantle rock to bed rock, dip and strike of rock strata, underground water, making of soil by weathering, . . . development of miniature valleys in clay banks at the margin of quarry, showing growth of valleys headward, tributaries, lakes, waterfalls, deltas, flood-plains, river terraces, struggle of streams for territory, and other phases of stream action. At the Drainage Canal the great embankments on each side are of glacial drift thrown out of the canal. Here could be seen, in miniature mountain ranges, mountain peaks made by erosion, mountain valleys and passes, alluvial cones and their relation to mountain valleys." An equally complete set of miniature forms could be found in most parts of the plains of India.

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The type of landscape made familiar to so many Englishmen by the South African war—a generally level plain broken here and there by isolated elevation (kopjies) rising like islands above the general level, and usually composed of granite or other ancient crystalline rocks—seems to be, in an especial degree, characteristic of the African continent. It is found not only in South Africa but also in East Africa, and in the Sudan. A German geographer has recently made an attempt to explain this form of land-surface, and the general conclusion to which he has come is that it is the result of wind-erosion acting under more or less desert conditions. These isolated elevations are merely outstanding masses of rock left after the rest of the original surface has been denuded away by the action of strong winds laden with particles of sand. In some cases the masses so left have been subsequently modified by river-erosion, and the plain originally formed as the consequence of wind-erosion has been covered over by the detritus obtained by the further wearing down of the outstanding elevations. The objection to the application of this theory to Africa generally is that it involves the conclusion that considerable portions of equatorial Africa must have been desert in recent geological times—a conclusion for which there is not, at present, sufficient evidence.

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In an article in *The Geographical Journal* for November, Dr. Sven Hedin reports the progress made in preparing for publication the scientific results of his last journey in Central Asia in 1899-1902. The price of the complete work will be £15, and it is interesting to find that the first two subscribers came from Japan. Dr. Sven Hedin is responsible for the purely geographical part of the text. This will appear in four volumes, treating respectively of (1) The Tarim River, (2) Lop-nor, (3) Northern and Eastern Tibet, (4) Central and Western Tibet, and will be in the nature of a commentary upon the atlas, the *pièce de resistance* of the entire work. The atlas will consist of about eighty-five sheets, most of them on the scale of 1 : 200,000, all of which are being prepared in Sweden. There will also be a general map in sixteen sheets, on the scale of 1 : 1,000,000, which is to show all that is now known about the geography of Central Asia.

SCIENCE NOTES.

BY

WILLIAM JESSE, M.A., F.Z.S.

THE medical profession is once more excited by the statement of Dr. Doyen, the famous surgeon, who on the 18th October read a long-promised paper on "New treatment of Cancer," before the International Congress of Surgeons at Paris. At the outset, the speaker explained that he did not claim to have found a cure for this fell disease. All he had done was to indicate and describe methods which had given him results which had not hitherto been obtained by anyone else. Up to September 30th, 1904, he had obtained forty-two cases. Six of his patients had died accidentally after their recovery appeared to be a matter of certainty. Dr. Doyen expressed his willingness to submit patients, treated by his methods, to a body of professional men selected by the Congress, and the results of their investigation are awaited with the very greatest interest. Many so-called cures have been put forward, only to delude and disappoint the unhappy victims of this scourge, and doctors are now excessively chary of admitting the potency of any treatment. If the examining committee gives a favourable report, it will cause a wave of hope to flow through the breasts of many a sufferer and his friends, and bitter will be the disallusioning, should the "cure" turn out no better than its predecessors. For this, if for no other reason, Dr. Doyen's methods and patients will be submitted to the most searching examination before any conclusions are arrived at.

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Experiments with X-rays have to be carried out with the very greatest care, or the operator will find himself in all probability attacked by a terrible disease known as "dermatitis." A leading authority on these rays, Dr. Hall Edwards, of Birmingham, is a recent sufferer. His hands are said to be in a terrible state, being almost covered with a kind of wart. The nails are black and the skin coarse and dry. There is apparently no specific remedy for the disease, and the only thing to be done is to cease operating with the rays. Curiously the patient does not seem to be so liable to attack, though several unfortunate occurrences took place when the discovery was in its infancy. With suitable precautions dermatitis may be avoided. Sir Oliver Lodge opines that the X-rays themselves are not responsible for the sores, but something which accompanies them, and which can be screened off by suitable appliances, whereas no screen will entirely cut off the rays themselves. Mr. Edison, the inventor, whose assistant recently died from the effects of exposure to the X-rays, is himself suffering terribly from the same cause. "I never expect to recover," he said in answer to an inquirer. "Sometimes the pains across my stomach are almost unendurable. Huge knots form. No medicine will dissipate, no treatment seems to allay the awful suffering. I simply have to wear the pain away." Such is the heavy price that Nature sometimes exacts from those who desire to pry into her secrets.

* * * *

The following extract from the Anglo-Saxon version of the "Herbarium" of Apuleius quoted in *The Periodical* is worth repeating. It refers to the mandrake, that curious little plant, with roots which were supposed to resemble a human being, and which when torn from the earth, was supposed to utter a piercing shriek.

"This wort, which is named μανδραγόρας, is great and illustrious of aspect, and it is beneficial. Thou shalt in this manner take it. When thou comest to it, then thou shalt recognize it by this, that it shineth at night altogether like a lamp. When first thou seest its head then inscribe thou it instantly with iron, lest it flee from thee; its virtue is so great and so famous that it will immediately flee from an unclean man when he cometh to it, hence, as we said before, do thou 'inscribe' it with iron; and thou shalt delve about it so that thou do not touch it with the iron, but thou shalt earnestly with an ivory staff delve the earth. And when thou seest its hands and feet then tie thou it up. Then take the other end and tie it to a dog's neck, so that the hound be hungry; next cast meat before him so that he may not reach it except he jerk up the wort with him. Of this wort it is said that it hath so great might, that whatsoever thing diggeth it up shall soon in the same manner be deceived (*i. e.*, fall dead)."

The Latin word *decipere* is evidently a mistake for *decidere* = fall down dead.

* * * *

An investigation of the action of a great number of metals on copper silicide, says a writer in the *Practical Teacher*, leads to the conclusion that certain of them—such as silver, tin, zinc, and aluminium—have a real affinity for copper, forming an alloy with this metal, and causing the silicon to crystallise out. Other metals, on the contrary, re-
molten copper silicide, uniting with silicon to form a definit
and giving at the same time compounds with silicon and
investigate the equilibrium of these systems, the writer
of metallic masses containing copper, silicon and
definite proportions. The experiments led to the
definite silicides of manganese, *viz.*, Si Mn_2, Si Mn,

* * *

Professor Stentzel, of Berlin, reports t
he has observed on the southern hemisphere
tionally large, and numerous small, spots.
on July 27th, of the last of the ex
of spots, these products of condens
selves, but they invariably remain
night of August 20th and 22nd,
southern spot zone, on the eas
eruptions of brilliant radiance,
of the sun, and afterwards t
spots, which, through spher
lines. As further advance
meridian, the group of s
mous dimensions. On
shape of a beautifully f
part a huge black mas
single spots. On Aug
sun behind it, it
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same zone of likewise large dimensions, having one main spot and several smaller spots, which had extended, by August 28th, three days after its appearance, over a distance of from 34,740 miles to 38,601 miles. Also in the northern spot zone, with a length of almost the same as the area of eruption first described, there appeared several small spots, so that simultaneously there were four groups observable. Professor Stentzel counted on the sun's disc, so far as the weather allowed him, six independent sun spots in 1901, seven in 1902, 36 in 1903, and up to August 28th of this year 72.

* * *

The phonograph reproduces the sounds, and the cinematograph the sights of the world, but the combination of the two, so as to complete the living illusion, is not so easy as it appears. Perfect synchronism must be obtained in order that the words may fit the play of the lips, the changes of expression, and the gestures of the body, or much of the point will inevitably be lost and the result will be jerky and awkward. This desired synchronism has apparently been at last obtained by MM. Gaumont and Decaux, two Frenchmen, by means of the electric motor of peculiar construction. A simple way of making the two machines keep time is to let one drive the other, and as the cinematograph needs more power to work it than a phonograph, it might be thought that the former should drive the latter. In practice, however, it is found more satisfactory to let the phonograph furnish the motive power to the cinematograph as this
the vibration of the latter. A ring of metal contacts is fixed
axle of the phonograph, which are swept by fixed metal
the commutator of a dynamo. The brushes are joined
he field magnets of a motor, which are in sections
me ring, and the contacts with a source of electricity,
e of the phonograph revolves, the current is sent
nd one section of the ring after another. The
e motor, which resembles a Siemen's armature,
side the ring, and its revolution works the
axle of the phonograph.

* * *

e, says Mr. Munro in the *Globe*, to
creen from the front, and put the
cable of wires is wanted to connect
an advantage, of course, to add
to the pictures, but at present we
chronising of the "Chronophone,"
und machine. The advantages
and. Future generations will
personations and oratory of
be able to realise to the
of the actor and the orator
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CORRESPONDENCE.

IS "T" A DENTAL OR A LINGUAL?

SIR,

THE Editor, *Indian Education* (September 1904), was certainly correct in calling the English 't' palatal. Mr. Nanjiani seems to be puzzled at finding more palatal sounds than those "in Sanskrit . . five in number." As a matter of fact, the 'y' of *yes*, referred to by him, exists as य in Sanskrit, and is recognised as palatal. Similarly, all native grammarians, Sanskrit and Vernacular, give ऋ and ष as cerebrals (or rather cephalics—मूर्द्धन्य), in addition to the five ordinary sounds ट, ठ, ड, ढ, ण, classed as such. As far as I can judge, English 't' is a quite definite sound, and is properly described by the Century Dictionary as "the surd . . . mute . . . produced by a complete closure . . . between the *tip* of the tongue and a point on the roof of the mouth . . . close behind . . . the basis of the upper front teeth." The *five* palatals of *Sanskrit* are formed by the *upper surface* of the tongue near the tip at very nearly the same point of the palate. The following table will readily appeal to those who can perceive the difference between the three sibilant sounds in Sanskrit and their places of production:—

	Cerebral (cephalic).	Palatal.	Dental.
Sibilant	ष	sh (श)	स (s)
Surd	ट	t	त
Sonant	ड	d	
Nasal	ण	n	

The cephalic aspirates do not exist in Englis sounds of 'th' we have the sibilated forms c
थ and ध.

As to transliteration, I should thin 't' as ट; and as the latter is now ve such emphatic cephalic click pre-English days, I would as Mr. Pfleiderer thinks त more that on the Continent of Europe, 'd' sounds are more dental than has to be very careful in introd pupils.

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Mohan Ghose. Vols. I and II., Rs.2.

INDIAN EDUCATION.

BOOKS RECEIVED.

German Commercial Practice Connected with Export and Import Trade. Part I. By J. Graham and G. A. S. Oliver. (*Macmillan & Co.* 2s. 6d.)

French Commercial Practice, etc. Part I. By J. Graham and G. A. S. Oliver. (*Macmillan & Co.* 2s. 6d.)

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Elementary Practical Physiology. By J. Thornton. (*Longmans, Green & Co.* 3s. 6d.)

Essentials of Chemical Physiology. By W. D. Halliburton. (*Longmans, Green & Co.* 4s. 6d.)

A Physical Laboratory Manual. By H. N. Chute. (*Heath & Co.* 2s. 6d.)

A Further Course of Practical Science. By J. A. Leonard and W. H. Salmon. (*J. Murray.* 2s.)

Notes on Building Construction, 2 vols. (*Longmans, Green & Co.* 10s. 6d. *net each.*)

Technics. October 1904. (G. *Newnes.* 9d. *net.*)

Albion Series of Chalk Drawings. (*G. Philip & Sons.* 2s. *net.*)

Albion Series of Outline Chalk Drawings. (*G. Philips & Sons.* 4d.)

Technological and Scientific Dictionary. Part V. Edited by G. F. Goodchild and C. F. Tweney. (*George Newnes.* 1s. *net.*)

Examples in Algebra. By W. M. Baker and A. A. Bourne. Part I., 1s. 6d. Part II., 2s. Parts I. and II. together, with Answers, 3s. (*G. Bell & Sons.*)

New Geometry for Senior Forms. By S. Barnard and J. M. Child. (*Macmillan*

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& Co. 2s. *each.*)

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Latin Prose. By W. Horton

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OUR CONTEMPORARIES.

THE October number of *Hindustan Review* opens with an article on Lord Curzon's statement of the proportion of Europeans and Indians employed in the Public Services of India. The writer, Mr. G. Subramania Iyer, denies Lord Curzon's figures, and gives elaborate statistics to support his refutation. In the department of Education, according to Mr. Iyer's tables, which are doubtless correct, between the years 1867 and 1903, of *new* appointments carrying salaries of Rs.75 to Rs.200, four have been given to Europeans, thirteen to Eurasians, thirty-nine to Mahomedans, and 259 to Hindus. In the lower grade of educational appointments, therefore, natives of India have nothing to complain of. Of newly created posts carrying salaries of Rs.200 to Rs.1,000, eleven have, in the same period, fallen to Europeans, five to Eurasians, eighteen to Mahomedans, and 187 to Hindus. Of the highest educational officers whose salaries are over Rs.1,000, 48 are Europeans and 1 a Hindu. Thirty-one new appointments of this value have been made during 1867—1903 and thirty of these have been conferred on Europeans. It appears, therefore, that, by Mr. Iyer's own figures, it is only from the highest educational posts that natives of India have been continuously excluded, and we do not think that Mr. Iyer's arguments have proved that, in matters of education, Lord Curzon's statement is incorrect that the British administration has been "characterised by a liberality unexampled in the world." Mr. Iyer, like so many others, argues this question from a purely abstract point of view, and forgets that British policy cannot be governed entirely by abstract principles.

The same *Review* contains an account of an interview wi
Gaekwar of Baroda, in which the latter is made to say that he is
with the progress of female education in his State and hopeful a
The two chief difficulties are the low standard of marriag
girls—a difficulty which has been met by legislation rai
—and, secondly, the language difficulty. English
to be a good medium of learning for native girls and
little good literature and few good books for educa
opposed to compulsory religious ed
versities. He thinks that the educ
would like to see an annual gather
of social, moral and intellectual m

* *

The School World of Novem
Among other articles is one on
the construction of Esperanto, t
and says that it is making gr
at least one English school, an
convenience, and educative
article in the October num
Education on the teachin
The Board suggested a n
reading aloud, (*b*) Mea
(*d*) Paraphrase, (*e*) A
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other (*e.g.*, in point of historical setting or ideals), and suggests a number of other books. The regulations of the Board of Education deserve to be carefully read by Indian schoolmasters, especially those of European schools, and Mr. Fowler's suggested courses will also supply useful hints for arranging a course of reading in English literature. Equally useful is Mr. Lindsey's selection of books for the teaching and study of History. It is divided into three heads, General, Mediæval, and Modern History, under each of which heads "necessary", "desirable", and "ideal" books are distinguished. The "necessary" and "desirable" books together cost about £20, but a shorter list costing only about £2 is also given. This we reproduce: (1) Freeman's *General Sketch of European History* (Macmillan, 3s. 6d.); (2) Adam's *European History* (Macmillan, net 6s. 6d.); (3) Putzger, F. W., *Historischer Schulatlas* (Velhagen, 3s. net); (4) Ploetz-Tillinghast's *Epitome of History, Ancient, Mediæval, and Modern* (Blackie, 7s. 6d.); (5) George's *Relations of Geography and History* (Frowde, 4s. 6d.); (6) Jenks' *Primer of Politics* (Dent, net 1s.); (7) Cunningham's *Western Civilisation in its Economic Aspects*, 2 vols. (Clay, 9s.); (8) Bourne's *Teaching of History and Civics* (Longmans, net 6s.); (9) Myer's *The Middle Ages* (Ginn, 4s.); (10) Myer's *The Modern Age* (Ginn, 6s.). This list might be varied and perhaps improved, but as a minimum for a poor man it would serve well. In place of the German historical atlas might be substituted Philips' atlas.

* * * *

In the *Journal of Education* is an interesting article on "Popular Misconceptions Regarding Education." The first misconception is that
ion is subversive of the willingness of the labourer for manual toil.
Exp ter holds that education does not affect a strong bent, and that
greatest ca hose who have no such bent that are diverted from manual
by a terrible c rk's and office work. But even if this be true, it does not
rays, Dr. Hall nor does it answer the objection that education takes
are said to be in a t labour men who have no particular bent for anything,
The nails are black an ss make fairly efficient labourers if they were set
specific remedy for the misconceptio , he says, is that to make education
operating with the rays e, to che it. This requires little refutation.
liable to attack, though s er is ny of parent and pupil alike. This
the discovery was in its s. ngland than in India, but it exists
may be avoided. Sir Oliv ndge tes on the parent's part in a feeling
not responsible for the sores, b t som I. and himself, and occupies some
which can be screened off by suitable ich love would fain monopolise. But
entirely cut off the rays themselves. T. ich the learned and pedagogues
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GOVERNMENT NOTIFICATIONS.

PERMANENT NOTIFICATION.

No. 3197 OF 1902-03.

POONA: OFFICE OF THE
DIRECTOR OF PUBLIC INSTRUCTION,
18th July 1902.

INDIAN EDUCATION.

The Educational Department is not responsible for anything which may appear in this publication, unless over official signature.

F. G. SELBY,
Acting Director of Public Instruction.

NOTIFICATION.

"Marathi Terrestrial Globe (6 inches) with wooden stand and brass meridian," price, Rs.6-8-0, by Mr. Anant Ganesh Gadre, 782, Sadashiv Peth, Poona City, is sanctioned for use in Vernacular Schools of the Bombay Presidency.

Poona: Office of the
Director of Public Instruction,
8th December 1904.

J. G. COVERNTON,
for *Director of Public Instruction.*

NOTIFICATION.

The following Addendum to the Grant-in-Aid
published for general information.

Poona: Office of the
Educational Inspector, C. D.,
8th December 1904.

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J. G. COVERNTON,
for *Director of Public Instruction.*

List of appointments, etc., in the Educational Department, from 11th November to the 10th of December 1904.

APPOINTMENTS MADE BY GOVERNMENT.

9th November 1904.—Captain A. F. W. King, I.M.S., is appointed on relief, to be Professor of Materia Medica and Pharmacy, Grant Medical College.

12th November 1904.—Mr. Shivram Sadashiv Nadkarni, B.A., Head Assistant to the Director of Public Instruction, has been granted privilege leave for two months and twenty days, with effect from the 1st instant.

14th November 1904.—In Supersession of Government Notification No. 2071, dated the 9th November 1904, Captain A. F. W. King, I.M.S., is appointed on relief, to be substantive *pro tem.* Professor of Materia Medica and Pharmacy, Grant Medical College, *vice* Major J. B. Jameson, M.B., Superintendent of Mahableshwar.

Expeter
greatest care ho *ember* 1904.—Mr. Vasudev Ramchandra Purshit is appointed
by a terrible or Assistant to the Director of Public Instruction during the
rays, Dr. Hall ilege leave of Mr. Shivram Sadashiv Nadkarni, B.A., or
are said to be in a orders.
The nails are black 1904.—Mr. Ganesh Janardan Agashe, B.A., Acting
specific remedy for tor, Southern Division, is granted privilege leave for
operating with the ra 20th November 1904, or the subsequent date on
liable to attack, though self
the discovery was in its inchand Uttamchand Lalrani, B.A., is
may be avoided. Sir Oliver Lodge nd Master, Shikarpur High School.
not responsible for the sores, but som Brooke, Acting Inspectress of Girls'
which can be screened off by suitable two months' extraordinary leave,
entirely cut off the rays themselves. 21st October 1904.
assistant recently died from the effec
himself suffering terribly from the san R OF PUBLIC INSTRUCTION.
recover," he said in answer to an inquirer. A., B.Sc., Probationary 7th Assistant,
my stomach are almost unendurable. Hu nary 2nd Assistant in the Dhulia
will dissipate, no treatment seems to allay the
have to wear the pain away." Such is the Master, Akola High School, is
sometimes exacts from those who desire to pry School, Dhulia, *vice* Mr. Cham-

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The following extract from the Anglo-Sa ade :—
" Herbarium " of Apuleius quoted in *The* ege, to be Head Clerk in
repeating. It refers to the mandrake, that curio
roots which were supposed to resemble a human to be 2nd Clerk in the
when torn from the earth, was supposed to utter a p

Mr. R. S. Udgatti, sub. *pro tem.* 3rd Clerk, Deputy Educational Inspector, Dharwar, to be Local Fund Clerk to the Deputy Educational Inspector, Kanara.

29th November 1904.—The following appointments are made :—

Mr. R. V. Mashruvala, Head Clerk, Deputy Educational Inspector, Kaira, to be Head Clerk, Deputy Educational Inspector, Ahmedabad, *vice* Mr. M. P. Mehta, promoted.

Mr. C. G. Mehta, 2nd Clerk, Deputy Educational Inspector, Broach, to be Head Clerk, Deputy Educational Inspector, Kaira.

3rd December 1904.—Mr. H. V. Tapaswi, Probationary Clerk, Poona High School, is confirmed in his appointment.

Mr. S. N. Palkhe, Probationary Clerk, Deccan College, Poona, is confirmed in his appointment.

Mr. B. M. Parekh, Local Board Clerk, Deputy Educational Inspector, Surat, and sub. *pro tem.* 9th Clerk, in the Office of the Educational Inspector, Northern Division, is appointed 2nd Clerk, Deputy Educational Inspector, Broach, but to continue sub. *pro tem.* 9th Clerk, in the Inspector's Office, till further orders.

5th December 1904.—Mr. R. S. Udgatti, sub. *pro tem.* 3rd Clerk, Deputy Educational Inspector, Dharwar, is appointed 2nd Clerk, Training College, Dharwar.

7th December 1904.—Mr. S. J. Pathan (S. T. C.), sub. *pro tem.* 14th Assistant Nariad High School, is confirmed in his appointment.

Poona: Office of the
Director of Public Instruction,
14th December 1904.

J. G. COVERNTON,
Asst. Director of Public Instruction.

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Poona, 12th December 1904.

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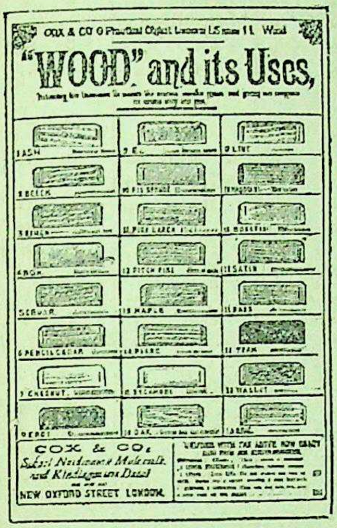
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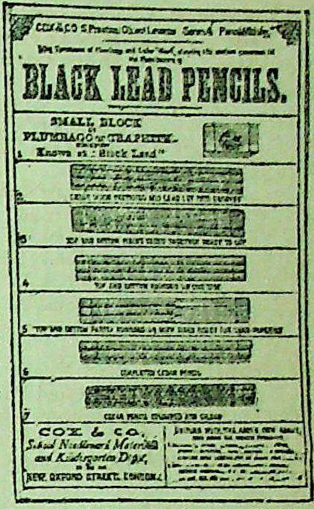
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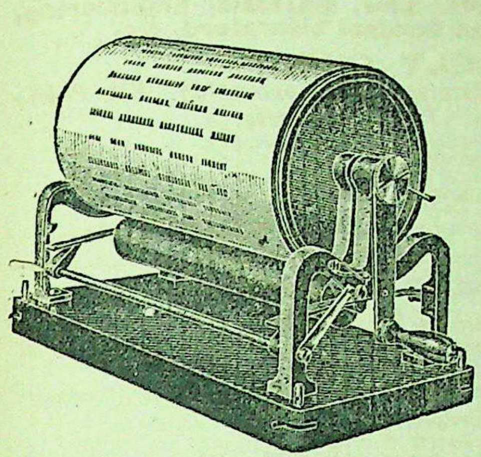

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